



**United States Department of the Interior
Bureau of Land Management**

**Ely Field Office
Ely, Nevada**

July 2005



**Draft – Volume 1 (Chapters 1, 2, and 3)
Resource Management Plan /
Environmental Impact Statement
for the Ely District**



COOPERATING AGENCIES:

Duckwater Shoshone Tribe
Ely Shoshone Tribe
Great Basin National Park
Humboldt-Toiyabe National Forest
Lincoln County
Moapa Band of Paiutes
Nellis Air Force Base

Nevada Division of Minerals
Nevada Division of Transportation
Nevada Department of Wildlife
Nevada State Historic Preservation Office
Nye County
White Pine County
Yomba Shoshone Tribe

BLM Mission Statement

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

BLM/EL/PL-05/019+1610

Public Disclosure Notice: Comments, including the names and addresses of respondents, will be available for public review at the Bureau of Land Management office address listed on the front cover of this document, during regular business hours, Monday through Friday, except holidays. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment(s). Such requests will be honored to the extent allowed by law and recent court decisions. All submissions from organizations, businesses, or individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Nevada State Office
P.O. Box 12000 (1340 Financial Blvd)
Reno, Nevada 89520-0006
<http://www.nv.blm.gov>



In Reply Refer To:
1610 (NV-910)

June 24, 2005

Dear Reader:

Enclosed for your review and comment is the Draft Resource Management Plan/Environmental Impact Statement (Draft RMP/EIS) for the Ely District. The Draft RMP/EIS considers and analyzes five alternatives that address future management options for approximately 11.4 million acres of public lands in east-central Nevada administered by the Bureau of Land Management's Ely Field Office. The alternatives are presented as Alternatives A through E and include a No Action Alternative and an agency preferred alternative. While an agency preferred alternative has been identified and analyzed for this Draft, a final decision has not been made. The final decision, which will be documented in a Record of Decision, will be made only after consideration of the comments received on the Draft RMP/EIS and after a Proposed RMP/Final EIS has been released.

Your review and comments are needed to ensure that your concerns are adequately addressed in the planning process. The public review period for the Draft RMP/EIS is 120 calendar days and will begin with the publication of the Notice of Availability in the Federal Register by the U.S. Environmental Protection Agency. Additional information on public meeting dates and times to discuss the draft plan and provide comments will be released via the RMP/EIS Planning Bulletin and news media after publication of the U.S. Environmental Protection Agency notice. Written comments should be sent to the RMP Project Manager at the Ely Field Office, submitted via email to elyrmp@blm.gov, or made on the comment form available on the project website identified below. All comments will be fully considered and evaluated in the preparation of the Proposed RMP and Final EIS, and all substantive comments will be addressed.

Comments should be as specific as possible and address the adequacy and accuracy of the document. Potential topics for comments are shown below. Please mention specific section and page numbers as appropriate.

- Identify inaccuracies or discrepancies in information.
- Identify new information that would have a bearing on the analysis.
- Identify new alternatives, impacts, or mitigation measures.
- Make suggestions for improving management direction.

Comments, including name and street addresses of respondents, will be available for public review at the Ely Field Office during regular business hours of 7:30 a.m. through 4:30 p.m., Monday through Friday, except holidays, and may be published as part of the Final EIS. You may request confidentiality if you are commenting as an individual, but you must state this prominently at the beginning of your written comments. Such requests will be honored to the extent allowed by law. Anonymous or illegible comments will not be considered. All submissions from organizations and

businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be available for public inspection in their entirety.

We appreciate your help in this planning effort and look forward to your continued interest and participation. Copies of the document may be obtained by contacting the Ely Field Office or from the project website at <http://elyrmp.ensr.com>. For additional information or clarification regarding this document or the planning process, please contact Gene Drais, RMP/EIS Project Manager, at (775) 289-1880.

Sincerely,

A handwritten signature in cursive script, reading "Robert V. Abbey".

Robert V. Abbey
State Director, Nevada

1 Enclosure

1. Draft RMP/EIS

DRAFT
RESOURCE MANAGEMENT PLAN / ENVIRONMENTAL IMPACT STATEMENT

Lead Agency: U.S. Department of the Interior
Bureau of Land Management
Ely Field Office

Cooperating Agencies: Duckwater Shoshone Tribe Nevada Department of Wildlife
Ely Shoshone Tribe Nevada Division of Minerals
Great Basin National Park Nevada Division of Transportation
Humboldt-Toiyabe National Forest Nevada State Historic Preservation Office
Lincoln County Nye County
Moapa Band of Paiutes White Pine County
Nellis Air Force Base Yomba Shoshone Tribe

Project Location: White Pine and Lincoln counties and a portion of
Nye County in east-central Nevada

**Comments on this EIS
Should be Directed to:** Gene Drais, Project Manager
U.S. Department of the Interior
Bureau of Land Management
Ely Field Office
HC33 Box 33500
Ely, Nevada 89301

Date Draft EIS Filed with EPA: July 29, 2005

**Date by Which Comments Must
be Received by the BLM:** November 28, 2005

ABSTRACT

This Draft Resource Management Plan and Environmental Impact Statement (Draft RMP/EIS) provides direction and guidance for the management of approximately 11.4 million acres of public land located in Lincoln, Nye, and White Pine counties in eastern Nevada that is administered by the BLM Ely Field Office. The Ely District RMP will consolidate the Schell and Caliente Management Framework Plans approved in 1983 and 1981, respectively, and the Egan Resource Management Plan approved in 1987. The Draft RMP/EIS focuses on the principles of multiple use and sustained yield as prescribed by Section 202 of the Federal Land Policy and Management Act of 1976.

The Draft RMP/EIS considers and analyzes five (5) alternatives, including a No Action Alternative (Alternative A) and an agency preferred alternative (Alternative E). These alternatives were developed based on public input including scoping (February through July 2003); numerous meetings with local, state, tribal, and federal agencies (Cooperating Agencies); and informal meetings with interested organizations

upon their request. The issues addressed in the formulation of alternatives include maintenance and restoration of resiliency to disturbed ecological systems within the portion of the Great Basin administered by the Ely Field Office, protection and management of habitats for special status species, upland and riparian habitat management, noxious weeds, commercial uses (including livestock grazing, mineral development, oil and gas leasing, rights-of-way and communication use areas), Areas of Critical Environmental Concern, travel management, land disposal, and wild horses. The alternatives provide for an array of alternative land use allocations and variable levels of commodity production and resource protection and restoration.

An agency-preferred alternative has been identified in this Draft RMP/EIS. The preferred alternative is not a final agency decision; rather, it is an indication of the BLM's preliminary preference at the Draft RMP/EIS stage in the environmental review process. This preference may change based on the agency and public comments that are received on the Draft RMP/EIS. Through interdisciplinary review and discussion by the Ely Field Office Interdisciplinary Team and Core Team, the Cooperating Agencies, the Eastern Nevada Landscape Coalition Science Committee, the Ely Field Manager, and the Nevada State Director, BLM has formulated Alternative E as its agency preferred alternative. This alternative includes the most appropriate management direction contained in the four other alternatives (Alternatives A through D), as well as direction that strikes a "middleground" among alternatives. Alternative E includes implementation of the Eastern Nevada Landscape Restoration Project, management of all physical and biological resources and resource uses for the multiple-use of renewable and nonrenewable resources, development of commodities, and allowance for future recreation and economic development of the counties and communities within the Ely District.

Responsible Official for EIS:

Robert V. Abbey
State Director, Nevada
Bureau of Land Management, Nevada State Office
1340 Financial Blvd.
Reno, NV 89502

READER'S GUIDE

Preparation of this document was guided by the Bureau of Land Management (BLM) planning regulations issued under the authority of the Federal Land Policy and Management Act of 1976 and federal environmental policy under the National Environmental Policy Act of 1969. The Draft Resource Management Plan/Environmental Impact Statement (RMP/EIS) primarily focuses on planning issues and the decisions needed to resolve them. The issues of greatest concern at the draft stage are listed below in alphabetical order.

- Areas of Critical Environmental Concern (ACECs) (see **Table 2.4-1**, Section 2.5.22, Section 3.22, and Section 4.22)
- Land Disposal (see **Table 2.4-1**, Section 2.5.12, Section 3.12, and Section 4.12)
- Mineral Extraction (see **Table 2.4-1**, Section 2.5.18, Section 3.18, and Section 4.18)
- Noxious and Invasive Weed Management (see **Table 2.4-1**, Section 2.5.21, Section 3.21, and Section 4.21)
- Special Status Species (see **Table 2.4-1**, Section 3.7, and Section 4.7)
- Travel Management and Off-highway Vehicle Use (see **Table 2.4-1**, Section 2.5.14, Section 3.14, and Section 4.14)
- Vegetation Treatment (see **Table 2.4-1**, Section 2.5.5, Section 3.5, and Section 4.5)
- Watershed Management (see **Table 2.4-1**, Section 3.19, and Section 4.19)
- Wild Horses (see **Table 2.4-1**, Section 2.5.8, Section 3.8, and Section 4.8)
- Wildlife (see **Table 2.4-1**, Section 3.6, and Section 4.6)

Other management concerns are addressed in the RMP/EIS, but did not drive the formulation of the alternatives. To assist agency decision-makers and the general public in choosing appropriate solutions to the planning issues, five alternatives or combinations of management options are proposed and their impacts evaluated. The alternatives were limited to those that span a reasonable and implementable means of managing public lands, while offering a broad range of options.

Document Format

The format of the RMP/EIS is based on BLM guidance issued in 2002. The guidance document was meant to provide a common look and feel to all RMP planning documents being prepared by BLM across the west.

READER'S GUIDE

The RMP/EIS is organized around 26 topical headings, which cover the range of resources, resource uses, and program areas managed by the Ely Field Office. Each topic retains the same last digit section number throughout the document from Chapter 2.0 through Chapter 4.0. For example, Air Quality has the final digit of 2, while Health and Safety has the final digit of 27. Introductions have the final digit of 1.

Two terms are used throughout the document that the reader should understand clearly before proceeding with review:

Ely District refers to the geographic area in White Pine, Lincoln, and Nye counties that contains BLM-administered lands. Not all lands within the Ely District are owned by the federal government or managed by the BLM. Resources are described as being on the Ely District.

Ely Field Office refers to the BLM's administrative unit that manages the Ely District. BLM staff members are part of the Ely Field Office.

Summary

The Summary provides an overview of discussions detailed in the full document and serves as a synopsis of the planning process and the alternative proposals and potential environmental consequences resulting for that process.

Chapter 1.0 (Introduction)

This chapter contains background information on the planning process and prepares the reader for the information that is presented in the rest of the document. The nine main sections in Chapter 1 include the Purpose of and Need for Action, Planning Area and Map, Ely District RMP/EIS Overview, BLM Planning Process, Planning Criteria, Scoping Issues, Management Framework and Implementation, Relationships that are Key to the Ely District RMP/EIS, and Consistency with Other Programs, Plans, and Policies.

Chapter 2.0 (Alternatives)

This chapter provides the description of management scenarios proposed for implementation by the Ely Field Office. This chapter includes a large table that summarizes the alternative proposals, followed by the detailed management direction for each resource program.

Chapter 3.0 (Affected Environment)

This chapter provides background information on the various resources, resource uses, and programs administered by BLM that could be impacted by plan decisions, and describes their conditions, trends, and current management. This chapter is organized with the same topical structure as Chapter 2.0.

Chapter 4.0 (Environmental Consequences)

This chapter describes the projected impacts and changes that would result with implementation of each of the alternatives. The chapter is organized by the same topic section format as Chapter 2.0 and Chapter 3.0; topics are then subdivided by alternative. A table that compares (in summary form) the impacts of implementing the alternatives is found at the beginning of Chapter 4.0.

Chapter 5.0 (Consultation and Coordination)

This chapter includes a description of public involvement opportunities and collaborative processes and provides lists of agencies and organizations receiving the document.

Chapter 6.0 (List of Preparers and Reviewers)

This chapter identifies the preparers of the Draft RMP/EIS along with the Cooperating Agencies that reviewed and provided comments on draft sections and documents as the Draft RMP/EIS was being prepared.

Other Information

Tables, Maps, and Figures have been included throughout the document to display and summarize pertinent information. Acreages displayed in this document should be considered approximations even when displayed to the nearest acre. Most acreages were calculated from Geographic Information System coverage and rounded to the nearest 1,000 acres. As a result, the acreages presented may not match acres provided in prior published documents containing calculations from master title plats or other base data. The data used throughout this document are for land use planning purposes and not necessarily for on-the-ground implementation. The precision afforded by Geographic Information System calculation does not reflect project-level accuracy. Acreage figures that are provided in this document for land use plan analysis purposes will be refined as subsequent site-specific analysis is conducted.

Appendices are lettered sequentially based on their first reference within the document and are contained on the CD-ROM you received individually or included as part of the printed copy of the RMP/EIS. Each appendix may contain several pieces of information related to the appendix topic.

All maps have been included in the separate map volume for easy reference and are numbered sequentially based on their first reference within the section they support. Maps related to appendix material are included and referenced within each appendix and are not numbered with the RMP/EIS document maps.

**ELY RESOURCE MANAGEMENT PLAN/ENVIRONMENTAL IMPACT STATEMENT
QUESTIONS AND ANSWERS****Q – What is the Great Basin Restoration Initiative?**

A – The Great Basin Restoration Initiative is a Bureau of Land Management (BLM) program in 5 western states including Nevada to restore the landscape (including watersheds and vegetation) within the Great Basin geographical area to a healthy and resilient condition. A watershed is a topographic area where water drains to a common river, stream, water body, or closed basin.

Q – Why do the Great Basin landscapes need to be restored?

A – There is a critical need to restore and maintain ecological diversity and resiliency within major portions of the Great Basin. The vegetative communities of the Great Basin have changed substantially over the past 150 years. Activities, such as livestock grazing, recreation, forest and woodland management, fire management, mineral exploration and mining, off-highway vehicle use, and the inadvertent introduction of noxious weeds and exotic invasive species have contributed to the change of vegetative conditions. These changes have led, in many instances, to steadily increasing fuel loads; increased fire intensity, size, and frequency; subsequent loss of soil productivity and vegetative diversity; and deterioration of watersheds (i.e., soil erosion and reduced water quantity and quality).

Q – What would happen if no action is taken to restore landscapes within the Ely District?

A – The conditions described in the previous question would continue, and there would be an increasing potential for further degradation, particularly more intense fires and further expansion of invasive species. The Ely Field Office believes it has the responsibility to begin landscape restoration as soon as possible in order to provide options for future generations by maintaining ecological health of the landscapes in the District. Allowing the current degradation to continue is unacceptable.

Q – How will the Ely Resource Management Plan (RMP)/Environmental Impact Statement (EIS) help restore Great Basin landscapes?

A – The Ely RMP/EIS will provide programmatic direction for landscape restoration on a watershed basis. In the past, project proposals would have been developed and implemented based upon boundaries of livestock grazing allotments. The Ely RMP/EIS will implement a policy change that directs BLM to plan and implement decisions based on watershed boundaries. Resources and resource uses will be managed to restore or maintain ecological health. Certain resource management changes and active treatments may need to be implemented, in portions of watersheds, to accomplish this objective.

Q – What is an RMP?

A – An RMP is a land use plan that prescribes broad, multiple-use guidance for managing public lands administered by the BLM.

Q – What is an EIS?

A – An EIS, required by the National Environmental Policy Act (NEPA), is a document that ensures that potential impacts of proposed management decisions are analyzed and described. The EIS process also provides numerous opportunities for public participation and input into the process.

SUMMARY

Q – Why prepare an Ely RMP/EIS?

A – Comprehensive evaluations of the existing land use plans for the three planning areas within the Ely District in 2001 and 2002 indicated a need for revisions to provide for appropriate management of all BLM programs District-wide. The RMP/EIS also is needed to facilitate implementation of the Great Basin Restoration Initiative.

Q – What public lands are covered by the Ely RMP/EIS?

A – The Ely RMP/EIS covers the approximately 11.4 million acres of public lands located in Lincoln, White Pine, and a small portion of Nye counties in east-central Nevada administered by the BLM Ely Field Office.

Q – What activities/resources are addressed in the Ely RMP/EIS?

A – The Ely RMP/EIS is a comprehensive document that addresses all activities and resources on the 11.4 million acres administered by the BLM Ely Field Office.

Q – How will projects designed to restore Great Basin landscapes be derived?

A – The Ely RMP/EIS will provide management direction to plan and implement decisions based on watershed boundaries. In the future, watershed analyses will be performed to determine if Resource Advisory Council standards are being met within a watershed. If standards are being met, a restoration plan will propose projects and resource uses designed to maintain the condition of the watershed. If standards are not being met, the restoration plan will propose projects and resource uses designed to improve the condition of the watershed.

Q – What are Resource Advisory Council Standards?

A – Resource Advisory Council Standards are expressions of the physical and biological condition or degree of function necessary to sustain healthy rangeland ecosystems. Standards that address the physical components of rangeland ecological systems focus on the roles and interactions of geology and landform, soil, climate, and water as they govern watershed function and soil stability. The biological components addressed in the standards focus on the roles and interactions of plants, animals, and microbes (producers, consumers, and decomposers), and their habitats in the ecological system. The biological component of rangeland ecological systems is supported by physical function of the system, and it is recognized that biological activity also influences and supports many of the physical functions of the ecological system.

Q – How long will it take to restore the Great Basin?

A – It will take decades to restore the vegetation within the entire Great Basin. In fact, it will take much longer than the life of this RMP to restore the vegetation within the portion of the Great Basin covered by this land use plan. However, in the short term, the vegetation in all or portions of some high priority watersheds will be restored as restoration projects and revised resource management is implemented.

Q – How much is it going to cost taxpayers to restore the Great Basin?

A – The cost of restoring the vegetation within the entire Great Basin is unknown. This RMP provides some cost estimates of restoration projects that would lead toward restoration of vegetation within the portion of

the Great Basin administered by the Ely Field Office. However, as these projects would continue well into the future, the long-term cost is unknown.

Q – How will we know when landscapes within the Great Basin are restored?

A – Restoration is considered to have occurred when vegetation is comprised primarily of those plants expected to live within a given portion of a watershed based upon its soil potential. The plants also are of varying ages and sizes and are resilient to natural disturbance. Over time, more and more maintenance projects will be proposed and implemented instead of restoration projects. Fewer and fewer noxious and invasive species will exist.

Q – What are State and Transition Models?

A – State and Transition Models describe the variety of vegetation communities or states that can occupy an individual ecological site based on soil potential of an area, the environmental factors that result in continuous or reversible changes over time within a state, and the environmental factors that produce discontinuous or nonreversible changes or transitions between states on a given site.

Q – How will State and Transition Models be used to make management decisions?

A – State and Transition Models will be used along with scientific knowledge of plants and soils to propose projects designed to restore Great Basin landscapes.

Q – Is there support outside the BLM to restore the Great Basin?

A – Yes. The Eastern Nevada Landscape Coalition, other organizations, and private individuals fully support the implementation of the Great Basin Restoration Initiative. The Eastern Nevada Landscape Coalition is a community-based partnership of approximately 90 entities representing agriculture, conservation, cultural, and environmental interests; private enterprise; and the broader general public. The Eastern Nevada Landscape Coalition's mission is to restore the Great Basin's dynamic and diverse landscapes in eastern Nevada through collaborative efforts for present and future generations.

Q – Are other federal, state, and local agencies cooperating with the BLM to prepare the Ely RMP/EIS?

A – There are 14 Cooperating Agencies helping to develop the RMP/EIS: Lincoln, White Pine, and Nye counties; Duckwater Shoshone Tribe, Ely Shoshone Tribe, Yomba Shoshone Tribe, and the Moapa Band of Paiutes; Nevada Departments of Transportation and Wildlife; Nevada Division of Minerals; Nevada State Historic Preservation Office; Great Basin National Park; Humboldt-Toiyabe National Forest; and Nellis Air Force Base.

Q – How are actions in the Lincoln County Conservation, Recreation, and Development Act of 2004 covered within the Ely RMP/EIS?

A – Actions in the Lincoln County Conservation, Recreation, and Development Act of 2004 constitute Management Actions Common to All Alternatives. Chapter 3.0 – Affected Environment describes and maps the following areas within Lincoln County: 14 areas of designated wilderness; two 0.5-mile-wide utility corridors; and approximately 90,000 acres of land available for disposal. Upon signing of the Record of Decision for the RMP, these areas would be withdrawn from all actions under the land laws.

SUMMARY

Q – How does the Ely RMP/EIS propose to manage sagebrush to benefit sage grouse and other sagebrush obligate species?

A – Sagebrush vegetation communities within the Ely District are extremely important for watershed health, wildlife habitat, and public uses. The BLM would implement the National Sage-grouse Strategy and the Western Association of Wildlife Agencies Sage Grouse Guidelines. It also would implement projects to improve the condition of sagebrush communities throughout the District at several times the current rate. These projects would include extensive removal or thinning of pinyon and juniper within sagebrush habitats. Approximately 2.5 million acres that are in desired states would be maintained, and 3.1 million acres that are not in desired states would be actively treated. These actions would improve the habitat of sage grouse and other sagebrush obligate species and reverse the downward trend of their habitat.

Q – How does the Ely RMP/EIS propose to manage wild horses?

A – Wild horses would be managed to emphasize animal quality and health over animal quantity. Horse herds should be able to survive drought conditions. Six herd management areas covering about 3.6 million acres would be established. This represents about 67 percent of the land on which they currently exist. The 1,760,000 acres eliminated from wild horse use are lands that do not contain habitat requirement necessary to support long-term viable wild horse populations.

Q – How many wild horses does it take to have a viable wild horse population?

A – A viable wild horse population consists of at least fifty breeding adults.

Q – How many acres of land are available for disposal?

A – About 23,358 acres in White Pine County and about 320 acres in Nye County would be available for disposal. Up to 90,000 acres in Lincoln County would be available for disposal under the Lincoln County Conservation, Development, and Recreation Act, of which 71,999 acres are identified in this RMP. Therefore, there are a total of about 95,677 acres identified as available for disposal. However, the actual number of acres that may be disposed of will depend on the demand for land by parties outside BLM and the potential impacts of the disposal.

Q – How does the Ely RMP/EIS propose to manage off-highway vehicle use?

A – Approximately 9,836,000 acres (86 percent) of the Ely District is currently open to cross-country off-highway vehicle use. Off-highway vehicle use would be limited to designated roads and trails on about 10,338,000 acres. About 1,062,000 acres would be closed to off-highway vehicles. These acres consist of designated wilderness and wilderness study areas. No acres would be entirely open to vehicle use without limitations.

Q – How many acres does the Ely RMP/EIS propose to be available for livestock grazing?

A – Initially, about 11,171,000 acres (3,000 acres less than current) would be available for livestock grazing, subject to management objectives and modification associated with land disposal actions. Further modification of acres available to livestock grazing could be made as watershed analyses are performed and actions implemented.

Q – Will the RMP/EIS restrict mineral exploration and development?

A – Yes, the RMP/EIS proposes restrictions on mineral exploration and development but this occurs on less than 16 percent of the planning area. Over 9.6 million acres (84 percent of the planning area) would be available for mineral exploration and development.

Q – What are Areas of Critical Environmental Concern (ACECs)?

A – ACECs are places within BLM-administered lands where special management attention is required to protect and prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources; or other natural systems or processes; or to protect life and provide safety from natural hazards.

Q – How many ACECs are proposed?

A – Three existing ACECs would be retained and 18 additional ACECs are proposed for designation. Ten of the 18 new ACECs have existing special designations, so there are only 8 newly designated areas. The 21 ACECs total about 351,400 acres (about 3 percent of the planning area).

Q – Can this RMP be used to promote economic development in rural areas?

A – Some portions of the RMP could be used to promote economic development in rural areas. As BLM-administered lands are offered for disposal and transferred into private hands, it is reasonable to assume that economic development would follow. Also, as BLM implements large-scale restoration projects, it also seems logical that direct economic benefit would accrue to some contractors, and spin-off economic benefit would accrue to the communities within the Ely District.

Q – Will there be more restrictions of the public's use of public lands?

A – As the population of east-central Nevada grows, there are additional stresses placed on the public lands within the planning area from visitation and use. Some additional restrictions may be necessary to protect resources.

Q – How can I participate in preparation of the Ely RMP/EIS?

A – Copies of the Draft RMP/EIS have been distributed to known interested parties. Public meetings will be held in the communities of Ely, Caliente, Mesquite, Las Vegas, Reno, and Tonopah. These meetings provide the public with a chance to provide comments on the Draft RMP/EIS. Dates and times for the meetings will be posted at <http://elyrmp.ensr.com>. Dates and times also will be listed in local newspapers and announced on local radio stations.

You also can provide written comments via U.S. mail or email. You can send your remarks to: Bureau of Land Management, Gene Drais, RMP Project Manager, HC 33 Box 33500, Ely, NV 89301-9408, or submit them to Gene Drais at elyrmp@blm.gov. Either way, please state whether you wish to be included on future mailing lists and if you would like to receive a copy of the Proposed RMP/Final EIS.

Q – How will I know that my comments have been considered in this planning process?

A – Section 5.1.1 of Chapter 5.0 of the Draft RMP/EIS explains the Scoping Process and how comments received during that period were used. The Proposed RMP and Final EIS will list the names of those who commented on the Draft RMP/EIS. It also will consolidate and summarize the comments received. Further,

SUMMARY

changes made to the Proposed RMP based on comments will be highlighted so readers can readily tell how their thoughts were incorporated.

Q – What is the next step in the RMP planning process?

A – The Proposed RMP/Final EIS, which incorporates comments on this Draft RMP/EIS, will be the next document issued for public review. There will be a 30-day public protest period regarding the Proposed RMP and Final EIS. An approved RMP and Record of Decision will be issued upon resolution of protests.

Q – When will decisions be made?

A – Decisions are made when the Record of Decision is signed by the Nevada State Director. This is expected to take place in calendar year 2006.

Q – What do I need to do to protect my right to protest the final decision(s) if I am dissatisfied?

A – To develop protest rights on a land use plan, an affected party must show they have participated in the process.

Q – Whom do I contact to learn more about the Ely RMP/EIS?

A – You can learn more on the Internet at a web site established to provide the public with up-to-date information about the Ely RMP/EIS. The address is: <http://elyrmp.ensr.com>. Also, the BLM will prepare bulletins to keep the public updated on the status of the RMP/EIS. Access <http://elyrmp.ensr.com> to read the bulletins. You also can contact BLM RMP Project Manager Gene Drais at (775) 289-1880 or on-line at elyrmp@blm.gov.

SUMMARY

Introduction

The BLM has prepared this Draft RMP and EIS to provide programmatic and implementable direction for management of public lands within the Ely District and to analyze the environmental effects resulting from implementing the alternatives addressed in this Draft RMP/EIS.

The planning area for the Ely District RMP/EIS consists of public lands in White Pine and Lincoln counties and a portion of Nye County in east-central Nevada. The District measures approximately 230 miles (north-south) by 115 miles (east-west). The Ely District was previously subdivided into three resource areas (Egan, Schell, and Caliente) but is now managed as a single administrative unit. The Ely Field Office manages approximately 11.4 million acres of public lands out of the approximately 13.9 million acres within the boundaries of the District.

Principal communities within or adjacent to the planning area that would be affected by resource management direction contained in the RMP/EIS include Cherry Creek, McGill, Ely, Lund, Baker, Pioche, Panaca, Caliente, Hiko, Alamo, and Mesquite.

The RMP was prepared using BLM's planning regulations and guidance issued under the authority of the Federal Land Policy and Management Act of 1976. An EIS is incorporated into this document to meet the requirements of the NEPA, the Council on Environmental Quality regulations for implementing NEPA (40 Code of Federal Regulation 1500-1508), and requirements of BLM's NEPA Handbook 1790-1.

Purpose of and Need for Action

This RMP/EIS is being prepared to provide the Ely Field Office with a comprehensive framework for managing lands in the planning area under the jurisdiction of the BLM. The RMP provides a public document that specifies management policies and actions on these lands. Implementation-level planning and site-specific projects would then be completed in conformance with the broad provisions of the RMP. The RMP is needed to provide a land use plan consistent with evolving law, regulation, and policy.

Section 102 of the Federal Land Policy and Management Act presents the overall policy for planning the use of resources that occur on BLM-administered lands. The BLM is required to prepare land use plans that serve as the basis for all activities that occur on BLM-administered lands. "The national interest will be best realized if the public lands and their resources are periodically and systematically inventoried and their present and future use is projected through a land use planning process coordinated with other Federal and State planning efforts." Section 202 of the Federal Land Policy and Management Act requires that "the Secretary shall, with public involvement ... develop, maintain, and when appropriate, revise land use plans."

The purpose of the revised Ely RMP is to provide direction for management of renewable and nonrenewable resources found within the Ely District and to guide decision-making for future site-specific actions.

SUMMARY

The need for the action is to consolidate, update, and establish appropriate goals, objectives, management actions, priorities, and procedures, within a multiple-use management context, for all BLM public land resource programs administered by the Ely Field Office. This action is needed to update resource management direction to allow Ely Field Office managers to meet nationwide BLM goals and objectives and for their actions to be consistent with current BLM policy.

Across the country, the first generation of BLM land use plans was prepared in the late 1970s and early 1980s. Within the Ely District, one RMP and one Management Framework Plan (MFP) were prepared in this timeframe. In 1996, management of the Caliente Resource Area was transferred from the Las Vegas Field Office to the Ely Field Office. The Caliente Resource Area also was covered by a MFP. Even with periodic amendments, these three 15- to 20-year-old plans no longer meet the management needs of the Ely Field Office. Thus, the BLM is revising the three existing land use plans into a single RMP for the entire District. This combined plan is expected to serve the management direction needs of the Ely Field Office for the foreseeable future. The final Ely District RMP would remain in effect as long as the management direction contained in the Plan is valid in light of scientific understanding and current management needs. The Plan would be updated and amended periodically to maintain its effectiveness as long as practical. When the Plan reaches the end of its effective life, a new plan would be prepared. However, since the life of the Plan is dependent on many variables, it is not possible to estimate its duration.

The revised RMP will direct the Ely Field Office in resource management activities including leasing minerals such as oil and gas; construction of electrical transmission lines, gas pipelines, and roads; grazing management; recreation and outfitting; preserving and restoring wildlife habitat; selling or exchanging lands for the benefit of local communities; military use of the planning area; and conducting other activities that require land use planning decisions. The new RMP also is needed to facilitate implementation of the Great Basin Restoration Initiative, a regional initiative to implement actions to maintain or improve ecological health at the landscape scale. To address these management responsibilities, the Ely Field Office has undertaken a planning effort that emphasizes a collaborative approach where local, state, federal, and Tribal governments; the public; local user groups; and industry work with the BLM to identify appropriate multiple uses of the public lands.

Ely Field Office Vision of the Future

The Ely Field Office vision of the future reflects the statewide BLM vision and applies this to the local setting. The vision of the future provides a context for development of management objectives, standard practices, performance goals, and priorities in the Ely RMP to reach the long-term goal of healthy ecological systems while supporting sustained economic uses and local community needs. A future of resilient and diverse landscapes is one that Ely Field Office employees will strive to achieve together with our neighbors in eastern Nevada and the American people.

Public Involvement

From the initiation of work on the RMP/EIS, the Ely Field Office has set consultation and coordination with affected or interested parties as a key priority. There have been five primary elements of consultation through preparation of the Draft RMP/EIS:

- RMP/EIS scoping process
- Planning bulletin mailings
- RMP/EIS web page
- Informal presentations to interested groups
- Cooperating agency involvement

In February 2003, a 60-day scoping period formally began with the publication of the Notice of Intent in the Federal Register on February 10, documenting BLM's intent to prepare an RMP/EIS. Individuals and organizations were invited to submit comments in writing to the BLM. Six public meetings were held in March/April, 2003, in Ely, Caliente, Mesquite, Las Vegas, Reno, and Tonopah, Nevada. Written comments also were received throughout the 60-day comment period, ending April 10, 2003. Scoping helps identify issues important to the management of the area and assists in determining the extent of the analysis as well as specific issues to be examined in the planning process.

RMP Management Focus

The restoration and maintenance of healthy ecological systems within watersheds is a primary focus for the future management of the Ely District. Healthy ecological systems are geographically diverse and change over time. They are compatible with soil potential and are resilient to disturbance.

Resources and resource uses will be managed to restore or maintain ecological health. Certain resource management changes and active treatments may need to be implemented, in portions of watersheds, to accomplish this objective. Adaptive management will be pursued to avoid deteriorating conditions favoring invasive plants and catastrophic fires. Any projects will be implemented so as to result in a mosaic of vegetation within a watershed.

In the long term, natural disturbance (such as drought or fire) will occur and fewer treatments will be needed to maintain ecological health. The result will be a variety of vegetation phases within a watershed, which will provide diverse, healthy conditions for future generations.

Throughout the planning process, the BLM has and will continue to prepare planning bulletins to keep the public updated on the status of the RMP/EIS. These bulletins are distributed to a mailing list of over 3,000 interested parties and also are placed on the project web page so they can be retrieved electronically.

The Ely RMP/EIS web page "went live" in November 2002 and can be accessed by the public at <http://elyrmp.ensr.com>. The web page is a convenient way for the BLM to communicate with the public concerning the RMP/EIS, and it provides the public with instant access to the ongoing EIS process as well as background information on the BLM planning process.

The BLM Ely Field Office has strived to make the EIS process as inclusive as possible. In addition to input from the general public, BLM staff has encouraged participation and collaboration from multiple governmental entities and public organizations. BLM staff has attended numerous meetings in addition to

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the six official public scoping meetings and provided presentations to organizations and commissions as invited.

Letters inviting various agencies and organizations to participate in the RMP/EIS planning process as cooperating agencies were sent to over 30 groups. Cooperating agencies are requested to assist in developing management direction and alternatives, reviewing environmental effects, and selecting a preferred alternative. Fourteen entities agreed to serve as cooperating agencies and have had varying levels of involvement in the development of this Draft RMP/EIS. These agencies and groups will continue to be involved through preparation of the Final RMP/EIS.

The BLM works in cooperation with American Indian tribes to coordinate and consult before making decisions or approving actions that could result in changes in land use, physical changes to lands or resources, changes in access, or alienation of lands. The Federal Land Policy and Management Act and the National Historic Preservation Act of 1966, as amended, require coordination with tribes in preparing and maintaining inventories of the public lands and determining their various resources and other values, developing and maintaining long-range plans providing for the use of the public lands, and managing the public lands. Federal programs are required to be carried out in a manner sensitive to American Indian concerns and tribal government planning and resource management programs.

Concurrent with the distribution of the Draft RMP/EIS, a Notice of Availability was published by the Environmental Protection Agency in the Federal Register, which marks the beginning of the 90-day public review. BLM also published a Notice of Availability in the Federal Register announcing the availability of the Draft RMP/EIS for public review and comment.

The public comment period on the Ely District Draft RMP/EIS will extend for 90 days following publication of the Notice of Availability by the Environmental Protection Agency in the Federal Register. Comments that are received will be carefully reviewed, and substantive comments that could require changes in one or more of the alternatives, or in the analysis of environmental consequences will be identified. Necessary modifications and corrections will be made, and the Proposed RMP/Final EIS will be completed and released. If protests are received on the Proposed RMP/Final EIS, they will be reviewed and resolved by the Director of the BLM before a Record of Decision and Approved Plan are released.

Alternatives Analyzed in Detail

The basic goal of developing alternatives was to prepare different combinations of management direction that would address issues and resolve conflicts among resources and resource uses. In addition to addressing issues, alternatives must meet the purpose and need stated for the RMP, must not be remote or speculative, and must be technically and economically practical or feasible. Each alternative is a complete land use plan that provides a framework for multiple use management of the full spectrum of resources, resource uses, and programs on the District. Under all alternatives, the Ely Field Office would manage the public lands in accordance with all applicable laws, regulations, and BLM policy and guidance, and to meet the Resource Advisory Council standards for rangeland health.

Overviews of each of the five alternatives considered in detail follow. A complete description of the management direction contained in each alternative can be found in Chapter 2.0 of this RMP/EIS. Vegetation treatment associated with watershed restoration is one of the key differentiators among the alternatives. **Table S-1** presents four "basic drivers" that were considered in developing the alternatives and the quantitative and qualitative differences among the alternatives for each driver.

Overview of Alternatives

Alternative A

Alternative A is the continuation of existing management on the Ely District, also called the "No Action Alternative" under NEPA regulations. This alternative would continue present management practices based on existing land use plans and other management decision documents. Valid decisions contained in the Egan RMP, the Egan RMP Oil and Gas amendment, the Schell and Caliente MFP, and the Caliente MFP Desert Tortoise Amendment would be implemented if not already completed. Direction contained in existing laws, regulation, and policy also would continue to be implemented, sometimes superseding provisions of the Egan RMP and Schell and Caliente MFPs. Resources, resource uses, and sensitive habitats would receive management emphasis at present levels. Restoration of ecological systems would utilize either active or passive methods, and would be implemented primarily in reaction to changes that occur from events such as fire or other disturbances. Restoration activities would be conducted on approximately 10,000 acres per year. Increases in herbaceous vegetation resulting from restoration would be allocated to livestock and wild horses as directed in the existing plans. Vegetation communities would be managed to achieve appropriate composition of woody and herbaceous species that promote resiliency. This would involve a mosaic of vegetation communities having differing ages (since treatment) and differing composition and structure. The current levels, methods, and mix of multiple use management of public land would receive attention at present levels. The three Areas of Critical Environmental Concern (ACECs) designated in the Desert Tortoise Amendment would be retained. In general, most activities would be analyzed on a case-by-case basis, and few uses would be limited or excluded as long as land health standards could be met. Off-highway vehicle use would remain relatively unrestricted throughout the District; there would be no recreation management areas with an emphasis on off-highway vehicle use of designated roads and trails. Fire management would continue under the existing Ely Managed and Natural Fire Plan, which provides for the beneficial use of fire in selected situations.

Alternative B

Alternative B would emphasize the maintenance of those systems that are functioning and healthy and the restoration of ecological systems and their historic mosaic patterns that have been degraded or altered. There would be a coordinated effort to restore the resiliency of native vegetation in shrub communities, woodlands, and riparian areas. Commodity production would be constrained to protect resources and systems that display healthy ecological processes or to accelerate improvement in those areas that do not. Production of food, fiber, minerals, and services would be more constrained than in the other alternatives, and in some cases and some areas, uses would be excluded to protect sensitive resources. Restoration would utilize either active (such as brush clearing) or passive (such as changes in livestock grazing)

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methods, and would be implemented proactively to build resiliency and resistance to changes that would degrade natural systems. Restoration activities would be accelerated in comparison to Alternative A and limited by available funding and resources. Increases in herbaceous vegetation resulting from restoration would be reserved for watershed maintenance and wildlife. Sagebrush communities would be managed to achieve a mosaic of herbaceous/shrub phases with minimal bare ground; interspaces between shrubs would be occupied by perennial grasses and forbs. The three ACECs designated in the Desert Tortoise Amendment would be retained, and 18 new ACECs also would be designated. Under this alternative, management would more often be applied across several vegetation types with a restoration emphasis on those areas most at risk of crossing a threshold into a less desirable vegetation community or ecological process, rather than focusing on specific sensitive resources in particular geographic areas. Off-highway vehicle use would be restricted to designated roads and trails; recreation management on approximately 310,000 acres would emphasize off-highway vehicle use of designated roads and trails. Fire use would be implemented to the greatest extent possible as a vegetation treatment tool following watershed analysis.

Alternative C

Alternative C would emphasize commodity production and production of food, fiber, minerals, and services, including provisions for several types of recreation. Under this alternative, constraints on commodity production for the protection of sensitive resources would be the least restrictive possible within the limits defined by law, regulation, and BLM policy, including the Endangered Species Act, cultural resource protection laws, and wetland preservation. In this alternative, constraints to protect sensitive resources would tend to be implemented in specified geographic areas rather than across the planning area. Active and organized recreation activities (such as off-highway vehicle use and races) would be emphasized in this alternative. Restoration of ecological systems would utilize either active or passive methods. Restoration activities would be accelerated in comparison to Alternative A and limited by available funding and resources. Increases in herbaceous vegetation resulting from restoration would be allocated to livestock. Land health restoration activities would focus on areas with understory vegetation appropriate for the ecological site, which could provide the production of additional forage. Sagebrush communities would be managed to achieve sites dominated by herbaceous vegetation (i.e., grasses) with some shrubs. The three ACECs designated in the Desert Tortoise Amendment would be retained, and 20 new ACECs also would be designated. Off-highway vehicle use would be restricted to designated roads and trails; recreation management on approximately 734,000 acres would emphasize off-highway vehicle use of designated roads and trails. All wildland fires would be suppressed and prescribed fires would be used only in limited situations as a vegetation treatment tool.

Alternative D

Alternative D would exclude all permitted, discretionary uses of the public lands including livestock grazing, mineral sale or leasing, lands and realty actions (such as disposals, leases, rights-of-way), recreation uses requiring permits, etc. The Ely Field Office would petition the Department of the Interior to withdraw a majority of the planning area from locatable mineral entry. This alternative would allow no commodity production and would include management actions necessary to maintain or enhance resources and protect life and property. Any management actions would utilize primarily passive methods. Active restoration would

be restricted to previously treated areas (such as chainings and seedings), areas dominated by invasive species, and newly disturbed areas (such as those resulting from wild fires). Restoration activities would be focused toward a much narrower set of conditions than in Alternatives B and C. Such restoration would be primarily in reaction to changing conditions. Increases in herbaceous vegetation resulting from restoration would be reserved for watershed maintenance and wildlife or allocated wild horses. Sagebrush communities would be managed to protect existing native communities and to prevent invasions of annual exotic species. No ACECs would be retained or designated. Off-highway vehicle use would be restricted to maintained roads. Some components of the alternative may not be possible to implement because of legal constraints, but the alternative is included for purposes of impact comparison. Wildland fires would not be suppressed unless they are human-caused or threaten life or property.

Alternative E

Alternative E is the Ely Field Office's preferred alternative, and represents a shift from a commodity or individual resource allocation approach to an ecological systems approach to management (as described for the Eastern Nevada Landscape Restoration Project in Section 1.3.3.1). This alternative emphasizes improvement in ecological conditions and a high level of natural resource protection created by managing natural and manmade disturbances to avoid crossing vegetation thresholds while also providing for resource uses. This alternative would balance the need to restore, enhance, and protect resources, with the public's desire to provide for the production of food, fiber, minerals, and services on public lands. This would be done within the limits of an ecological system's ability to sustainably provide these products and services within the constraints of various laws and regulations. Restoration would utilize either active or passive methods, and would be implemented proactively to build resiliency to prevent further degradation of ecological systems. Restoration activities would be accelerated in comparison to Alternative A and limited by available funding and resources. Increases in herbaceous vegetation resulting from restoration would be distributed in a balanced approach with reservations for watershed and wildlife and allocations to livestock, and wild horses. Sagebrush communities would be managed to achieve a variety (mosaic) of phases (age classes) of sagebrush types with emphasis on shrub/herbaceous communities. Vegetation resources and fish and wildlife habitats would be restored and enhanced using a variety of tools, but to a lesser extent than Alternative B. However, constraints to protect sensitive resources could be implemented in specified geographic areas. The three ACECs designated in the Desert Tortoise Amendment would be retained, and 18 new ACECs also would be designated. Off-highway vehicle use would be restricted to designated roads and trails; recreation management on approximately 734,000 acres would emphasize off-highway vehicle use of designated roads and trails. Fire use would be implemented to the greatest extent possible as a vegetation treatment tool following watershed analysis.

Issues and Impact Conclusions

Planning issues were developed incorporating input from a number of sources including the public during scoping, interested organizations, cooperating agencies, and BLM resource specialists. Issues that were considered in the formulation of alternatives and analysis of impacts are presented in Section 1.6 of this RMP/EIS. Detailed descriptions of the environmental consequences that the management direction contained in the five alternatives would have on each resource, resource use, and management program

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can be found in Chapter 4.0. A comparison of environmental impact conclusions by alternative is presented in **Table S-2**. Also included in Chapter 4.0 are discussions of cumulative impacts and unavoidable adverse impacts.

Decisions to be Made

Land use plan decisions, which are made on a broad (programmatic) scale, guide subsequent site-specific implementation decisions. Specific projects for any given resource, resource use, or program that are not analyzed in this RMP/EIS will be detailed in future activity plans or site-specific proposals, and additional NEPA analysis and documentation will be conducted as needed.

After comments on the Draft RMP/EIS are received and reviewed, the responsible BLM officials can decide to modify any alternative (for example combine parts of different alternatives) and analyze the environmental consequences of the modified alternative in the Final RMP/EIS.

The alternative selected for implementation will be presented in the Proposed RMP/Final EIS, which will be available to the public. There will be a 30-day protest period, followed by resolution of any protests and release of a Record of Decision.

Table S-1
Summary of Key Features by Alternative

POLICY DIRECTION				
The Unified Federal Policy for a Watershed Approach to Federal Land and Resource Management, 43 Code of Federal Regulations 4180.1, BLM Manual 4180 – Rangeland Health Standards, and BLM Handbook H- 4180 – 1, mandate and provide guidance for completion of the watershed analysis process, leading to development of restoration goals for meeting land health standards.				
ALTERNATIVE				
A	B	C	D	E
BASIC DRIVERS				
Total Treatment Area (acres) ¹	6,214,530	7,592,310	3,633,450	6,229,570
Total Maintenance Area (acres) ²	4,597,870	3,220,090	7,178,950	4,582,830
Vegetation Types Emphasized for Treatment				
Low-elevation Sagebrush	Low-elevation Sagebrush and Pinyon-Juniper	Same as Alternative B	Exotic seedlings and invasive species	Same as Alternative B
Use of Extra Forage Made Available from Restoration Actions				
Allocation to livestock and wild horses	Reserve for watershed health and wildlife use	Allocation to livestock	Allocation to wild horses and reserve for watershed health and wildlife use	Allocation to livestock and wild horses, and reserve for watershed health and wildlife use

¹Treatment areas are composite acreage of vegetation communities and conditions needing active treatment to achieve a range of healthy conditions. Total acreage does not include Mojave Desert or riparian vegetation communities, which would not be the subject of major active vegetation treatments.

²Maintenance areas are composite acreage of vegetation communities and conditions where management may be used to maintain current conditions or achieve a range of healthy conditions without implementation of active treatment methods. Total acreage does not include Mojave Desert or riparian vegetation communities, which would not be the subject of major active vegetation treatments.

Table S-2
Summary Comparison of Impacts

CLIMATE AND AIR QUALITY	
Goal – Meet all applicable local, state, Tribal, and National Ambient Air Quality Standards under the Clean Air Act (as amended), and prevent significant deterioration of air quality within the Ely District from all direct and authorized actions.	
Alternative A	Air quality in the District is largely impacted by fire management decisions. Short-term impacts of fugitive dust from recreational events also can impact air quality. The existing Ely District Managed Natural and Prescribed Fire Plan would continue to be implemented with decisions regarding individual fires based in part on determination of where in the District fire would be beneficial and where it may be detrimental. Unplanned fires tend to burn hotter and longer than controlled burns resulting in more emissions and potentially worse air quality.
Alternative B	This alternative would likely result in more small fires and fewer major fires, and may improve air quality in the District.
Alternative C	In the short term, air quality impacts from fire could be lessened over the present. In the long term, air quality is likely to be impacted by greater numbers of large-scale fires producing more emissions.
Alternative D	Air quality would be impacted in both the short term and long term by an increased probability for occurrence of large-scale fire events.
Alternative E	Alternative E would be similar to Alternative B, in which fire would be used as a tool in vegetation management to the greatest extent possible. This approach would likely result in more small fires and fewer major fires, and may improve air quality in the District compared to Alternative A.
WATER RESOURCES	
Goal – Restore and maintain the chemical, physical, and biological integrity of the waters in the Ely District to maintain healthy ecological systems while sustaining multiple uses.	
Alternative A	Since restoration currently does not keep pace with the decline in ecological trends, groundwater recharge and seasonal surface water flows would be expected to decline. Shorter term runoff events (e.g., thunderstorms, snowmelt) would continue to exhibit their current timing and volume, or may occur over shorter time scales and with somewhat larger volumes in watersheds where conditions continue to degrade. Water quality would continue to decline under Alternative A. Evapotranspiration consumption would be expected to increase.
Alternative B	Water resources would improve under Alternative B because watershed analysis and restoration would take place at an accelerated rate. Localized, short-term increases in erosion and sedimentation may occur immediately following vegetation treatments. Such effects would be minimized by the implementation of best management practices during the treatment process.
Alternative C	In general, long-term improvements in water quality and water resources availability for uses would occur as a result of intensive vegetation management under Alternative C. Increases in water availability (mainly springflows and baseflows) would occur in areas conducive to groundwater recharge and discharge. Water usage and water quality degradation may occur in some areas as a result of increased recreational developments. Over the long term, these effects would be combined with rapid runoff, increased flooding, and greater sediment yield encouraged by the fire suppression approach under this alternative.
Alternative D	In general, improvements in water quality and water resources availability for uses would not be extensive as a result of management under Alternative D. Small increases in water availability, primarily in limited areas conducive to groundwater recharge and discharge, would occur. Water quality improvements would occur as a result of recreation and livestock management approaches. Over the long term, however, these improvements would be overshadowed by the fire management approach under this alternative, which would ultimately encourage rapid runoff, flooding, and sediment yield.
Alternative E	Water resources would be improved on a long-term basis as individual watersheds are analyzed and treated to restore vegetation resiliency. During the short term, localized increases in erosion and sedimentation may occur immediately following treatments. The potential for these effects would be minimized by the implementation of best management practices during the treatment process. Increases in water availability (mainly springflows and baseflows) would occur in areas conducive to groundwater recharge and discharge.

Table S-2 (Continued)

SOIL RESOURCES	
Goal – Maintain or improve long-term soil quality.	
Alternative A	Current soils impacts and accelerated erosion losses primarily result from changing ecological conditions within the District. Such factors include reduction in perennial herbaceous understory and widely scattered minor surface disturbances such as those resulting from concentrations of grazing animals, off-highway vehicle use, and various other human activities. Under Alternative A, the effects of accelerated erosion on soil resources would continue their current trends.
Alternative B	Under Alternative B, the scale of vegetation treatment would increase the short-term risk for accelerated erosion in the event of extensive soil disturbance or delays in restoration success. However, the implementation of best management practices, including restoration monitoring, would minimize this impact. On a long-term basis, the erosion potential of restored areas would be diminished, soil quality would be enhanced, and activities contributing to accelerated erosion and sedimentation would be reduced over much of the District. Restoration of vegetation resilience and return to historical fire regimes would result in reduced impacts to soils when fires occur.
Alternative C	Alternative C would involve substantial increases in terms of vegetation treatment. Thus, it would involve short-term erosion risk, but long-term improvement to soil stability and quality. Short-term impacts from management of vegetation and other resources would be minimized by best management practices. Long-term reductions in accelerated erosion may be limited by the emphasis on commodity production.
Alternative D	Alternative D would involve some increases in rates of vegetation treatment, but with a limited approach and treatment scale. It also would involve limited fire suppression. Thus, Alternative D would create long-term erosion risk, limit long-term benefits to soil quality from vegetation treatments, and enhance erosion risk from major fire events. Erosion-generating human activities such as off-highway vehicle use would be substantially reduced over much of the District, but benefits from limiting these more concentrated activities would likely be offset by more widespread increases in accelerated erosion from major wildfires.
Alternative E	Over the short term, Alternative E would be expected to increase the risk of soil erosion and temporary loss of productivity on freshly treated areas. Implementation of best management practices, including restoration monitoring, would minimize these risks. Long-term reductions in erosion rates and increases in soil quality would be expected with successful widespread vegetation restoration and weed management.
VEGETATION	
Goal – Where possible, manage vegetation resources to achieve or maintain resilient ecological conditions while providing for sustainable multiple uses and options for the future across the landscape.	
Alternative A	The historic rate of treatment (largely fire rehabilitation) each year to restore desirable perennial herbaceous species and restore ecological resiliency would be increased to the extent allowed under the current fire plan. This rate, however, is not considered adequate to match the current rate of ecological deterioration, increase in woody fuel, and expansion of weedy species throughout the District, and substantial long-term effects are anticipated.
Alternative B	Treatment rates and treated areas would increase substantially beyond current levels, thereby reversing the expansion of annual invasive-dominated communities and the expansion of pinyon and juniper trees into sagebrush communities over the long term. Following restoration treatments, these areas would be more resilient to future disturbance.
Alternative C	Treatment rates and treated areas would increase substantially beyond current levels, thereby slowing and potentially reversing the expansion of annual invasive-dominated communities and the expansion of pinyon and juniper trees into sagebrush communities. Treatments would produce a narrower range of desired conditions than Alternative B, requiring more frequent future treatments. Over the long term, untreated areas would be larger than in Alternative B and would become more vulnerable to major widespread fires. Thus, the long-term impact would likely be comparable to or greater than Alternative A.
Alternative D	Passive management would result in continued proliferation of tree species into historic sagebrush-dominated sites with minimal prospects for restoration of resiliency. Increases in fuel loading in many communities plus minimal fire suppression would lead to widespread fires with the resultant burned areas being converted to the herbaceous state or an altered state dominated by annual invasive species.
Alternative E	Treatment rates and treated areas would increase substantially beyond current levels, thereby slowing and reversing the expansion of annual invasive-dominated communities and the expansion of pinyon and juniper trees into sagebrush communities. Following restoration treatments, these areas would be more resilient to future disturbance, and the presence of vegetation mosaics (as opposed to continuous expanses of sagebrush or pinyon-juniper woodland) would reduce the long-term risk of future devastating fire events.

Table S-2 (Continued)

FISH AND WILDLIFE	
Aquatic Habitat and Fisheries	
Goal – In cooperation with the Nevada Department of Wildlife, manage suitable aquatic habitats to sustain nonnative fisheries and minimize conflicts between nonnative and native fish species. (Bonneville cutthroat trout are discussed under Special Status Species.) Native nongame fisheries are discussed in the Special Status Species section.	
Alternative A	Fisheries management would focus on sustaining habitats for nonnative fisheries by following Resource Advisory Council standards and guidelines. Conflicts with native species would be handled on a case-by-case basis. Other programs could continue to affect habitat for nonnative fisheries as a result of sedimentation, vegetation removal, and habitat alteration due to surface disturbance. Upland areas would continue to degrade in terms of vegetation loss and erosion, which would indirectly affect riparian areas along streams and springs. Land and reentry actions (e.g., rights-of-way or disposals) could involve subsequent changes in demand for either surface or groundwater resources throughout the District with resultant effects to aquatic habitat as a result of flow or water level changes.
Alternative B	Fishery management would result in maintenance and enhancement of habitat parameters involving riparian vegetation. Most of the same programs discussed in Alternative A also could affect fish habitat as a result of sedimentation, vegetation removal, or habitat alteration. Vegetation management would result in greater short-term impacts through erosion and vegetation removal as a result of increased treatment areas. On a long-term basis, these habitats would be improved along with the improvement of vegetation resilience and ecological health in the nearby riparian and upland areas. Fish habitat could be improved in Meadow Valley Wash and Clover Creek due to the ACEC designations and elimination of wild horses, respectively.
Alternative C	Management of nonnative fisheries would implement mitigation to resolve conflicts between nonnative and native fish species. Other programs would result in the same types of impacts discussed in Alternatives A and B. Increased sedimentation could affect aquatic habitat in the short term as a result of vegetation treatments and in the long term as a result of fire management. Watershed management could result in long-term improved habitat conditions in treated areas with an emphasis on recreation. Stream habitats in untreated areas would be jeopardized by increased risk of intense wildfires.
Alternative D	Habitat for nonnative fisheries would not be actively managed, which could involve the elimination of nonnative populations in some water bodies, and no new nonnative fisheries would be established. Greater impacts to nonnative fisheries habitat could occur due to uncontrolled wild horse population increases in herd management areas, increased dispersed recreation, and fire management with minimal fire suppression. Less short-term erosion would occur from vegetation treatment, but in the long term, erosion and sedimentation would be greater due to more intense fires.
Alternative E	Nonnative fisheries management would include habitat enhancement for native fish species where the two types of fisheries coexist. Vegetation treatments could result in increased short-term impacts from erosion and sedimentation immediately after treatment. These impacts would be minimized through implementation of best management practices during the treatment process. Changes in grazing management in riparian areas and restoration of vegetation resilience in nearby riparian and upland areas would improve habitat conditions over the long term.
Wildlife	
Goal – In cooperation with Nevada Department of Wildlife, provide habitat for wildlife (i.e., forage, water, cover, and space) that is of sufficient quality and quantity to support productive and diverse wildlife populations in a manner consistent with the principles of multiple-use management; to enhance biological diversity; and to sustain the ecological, economic, and social values necessary for all species.	
Alternative A	Although restoration would promote more suitable habitat conditions for wildlife species on a localized basis, long-term watershed level effects would continue to result in the conversion of vegetation cover types, increased tree density and canopy cover, decreased forest and shrub community structure, and a reduction in herbaceous cover for wildlife species. Landscape level effects would continue to result in increased habitat degradation and fragmentation, and a reduction in ecological health and vegetation resiliency.
Alternative B	On a watershed level, restoration activities would result in increased herbaceous forage, increased cover and community structure, and increased habitat quality for wildlife species. On a landscape level, restoration activities would improve wildlife habitats by reducing habitat degradation and fragmentation, promoting ecological health, and improving vegetation resiliency. Increased areas of treatment and widespread use of prescribed fires and managed natural fires would reduce the more severe impact of wildfires.
Alternative C	Implementation of this alternative would favor increased populations and expansion of high commodity wildlife species (e.g., elk). On a watershed level, wildlife conflicts would include decreased shrub cover, reduced community structure, and increased competition for habitat by sagebrush-dependent species. Landscape level effects would result in improved ecological health and vegetation resiliency despite a reduction in shrub and woodland-dominated areas. Increased potential for major widespread fires also would affect wildlife habitat over the long term.

Table S-2 (Continued)

Alternative D	The passive management approach of this alternative coupled with minimal fire suppression would result in continued degradation of wildlife habitat with increased tree density and canopy cover and a reduction of native herbaceous understory species. These habitat changes would result in reductions of herbaceous forage, plant community structure and complexity, and overall habitat suitability for wildlife species. Increased potential for major widespread fires also would affect wildlife habitat over the long term.
Alternative E	On a watershed level, restoration activities would result in increased herbaceous forage, increased cover and vegetation structure, and increased habitat quality for wildlife species. On a landscape level, restoration activities would improve wildlife habitats by reducing habitat degradation and fragmentation, promoting ecological health, and improving vegetation resiliency. Increased areas of treatment and widespread use of managed natural fire and prescribed fires would reduce the more severe impact of wildfires.
SPECIAL STATUS SPECIES	
Plant Species	
Goal – Manage public land to maintain, restore, improve, or enhance populations and habitats which lead to the recovery of federally-listed species and preclude the need for listings of proposed, candidate, state-protected, or sensitive species.	
Alternative A	A detailed analysis of potential impacts to special status plants would be completed during watershed and habitat analyses. As part of the standard operating procedures, potential mitigation measures and monitoring would be applied on a site-specific basis. Therefore, implementation of Alternative A would result in minimal short- and long-term impacts to special status plants and enable additional management emphasis for any populations identified during the watershed analysis.
Alternative B	The initiation of a systematic survey of potential habitats for the Ute ladies'-tresses orchid, development of recovery actions and a conservation strategy for potential habitat for or possible new occurrences of Ute ladies'-tresses orchid, and development of a detailed monitoring and inventorying plan for the Sunnyside green gentian would provide additional protection and recovery prospects for these species. The establishment of 18 ACECs for the protection of other resources and the land use restrictions associated with these ACECs may offer additional protection where and if special status plants occur in these areas. Therefore, implementation of Alternative B would result in additional protection for special status plants.
Alternative C	A detailed analysis of potential impacts to special status plants would be completed during watershed and habitat analyses. As part of the standard operating procedures, potential mitigation measures and monitoring would be developed on a site-specific basis. In addition, the establishment of 20 ACECs for the protection of other resources and the land use restrictions associated with these ACECs may offer additional protection where and if habitat for special status plants occur in these areas. Therefore, implementation of the Alternative C would result in additional protection for special status plants.
Alternative D	Potential habitat for Ute ladies'-tresses orchid and Sunnyside green gentian could improve in the District with the elimination of grazing and most other physical disturbances. A detailed analysis of potential impacts to special status plants would be completed during watershed and habitat analyses. The additional protection resulting from these measures, however, would be offset by the potential damage to special status plant populations resulting from increased wildfires and uncontrolled wild horse populations under this alternative.
Alternative E	A detailed analysis of potential impacts to special status plants would be completed in conjunction with each watershed and habitat analysis. As part of the standard operating procedures, potential mitigation measures and monitoring would be developed on a site-specific basis. Eighteen new ACECs would be established for the protection of other resources. The establishment of these ACECs and the land use restrictions associated with them may offer additional protection where and if special status plants occur in these areas. Therefore, implementation of Alternative E would result in additional protection for special status plants.
Aquatic Species	
Goal – Manage public land to maintain, restore, improve, or enhance populations and habitats which lead to the recovery of federally listed species and preclude the need for listings of proposed, candidate, state-protected, or sensitive species.	
Alternative A	Management for sensitive fish and invertebrate species would focus on the maintenance, mitigation, and restoration of habitat, as identified in the management and recovery plans for the species. Habitat for Pahrump poolfish in the Shoshone Ponds would be protected by fencing around the ponds. Other programs would continue to result in sedimentation and habitat alteration due to surface disturbance. Development of disposed lands could involve uses with water consumption requirements that could affect habitat through changes in flow or water level.

Table S-2 (Continued)

Alternative B	Sensitive fish and invertebrate species would be managed through evaluations of their overall habitat conditions. Numerous resource uses could affect sensitive aquatic habitat as a result of sedimentation, vegetation removal, or habitat alteration. However, grazing impacts would be eliminated. Vegetation management could result in greater short-term impacts through erosion and sedimentation as a result of increased treatment areas. Management and restoration plans with two new ACECs would help restore habitat for fish species in Condor Canyon and Lower Meadow Valley Wash. On a long-term basis, the restoration of vegetation resilience in riparian areas and the surrounding uplands would improve habitat conditions for sensitive fish and invertebrate species.
Alternative C	Program-specific impacts would be similar to Alternative A. However, sediment-related impacts to Pahrump poolfish could be reduced by fence repair around Shoshone Ponds. Most other programs would result in the same types of impacts discussed for Alternatives A or B. Increased recreation activities could result in additional surface disturbance and sediment impacts on habitat for sensitive aquatic species.
Alternative D	Emphasis on passive management of sensitive aquatic species through exclusion of commodity uses on public lands could result in improved habitat conditions. Greater impacts to nonnative fisheries habitat would occur due to uncontrolled wild horse population use in herd management areas, increased dispersed recreation, and fire management with minimal fire suppression. Less erosion would occur from vegetation treatment, but far more would occur from widespread wildfires.
Alternative E	Sensitive fish and invertebrate species would be managed through evaluations of their overall habitat conditions. Numerous resource uses could affect sensitive aquatic habitat as a result of sedimentation, vegetation removal, or habitat alteration. Changes in grazing management in riparian areas could improve habitat conditions in the long-term period in the Lower Meadow Valley Wash and White River drainages. Vegetation management could result in greater short-term impacts through erosion and sedimentation as a result of increased treatment areas. Management and restoration plans with two new ACECs would help restore habitat for fish species in Condor Canyon and Lower Meadow Valley Wash. On a long-term basis, the restoration of vegetation resilience in riparian areas and the surrounding uplands would improve habitat conditions for sensitive fish and invertebrate species.
Wildlife Species	
Goal – Manage public land to maintain, restore, improve, or enhance populations and habitats which lead to the recovery of federally listed species and preclude the need for listings of proposed, candidate, state-protected, or sensitive species.	
Alternative A	Management of special status species would continue to occur predominantly at the scale of individual allotments and occasionally at a District-wide scale through management actions that address an immediate need or habitat niche for the maintenance, mitigation, and restoration of a single special status species on a case-by-case basis. Although restoration would promote more suitable habitat conditions for special status species on a localized basis, watershed level and landscape level effects would include continued habitat deterioration for many of the special status species.
Alternative B	Special status species would be specifically assessed, based on species-specific desired future conditions, and compared to overall habitat conditions and identification of causal factors for declines at the mid-scale. On a watershed level, restoration activities would result in higher quality forage, increased cover and vegetation structure, and increased security for special status species. On a landscape level, restoration activities to achieve desired range of conditions would improve special status species habitats by reducing habitat degradation and fragmentation, and promoting ecological health and resiliency.
Alternative C	Management of special status species would continue to address an immediate need or habitat niche for the maintenance, mitigation, and restoration of a single special status species on a case-by-case basis. On a watershed level, special status species conflicts would include decreased shrub cover, a reduction in vegetation community structure, and increased competition for habitat by sagebrush dependent species.
Alternative D	Management of special status species would emphasize a passive management approach through the exclusion of discretionary commodity uses of public lands. On a watershed level, natural habitat transitions would continue with increased canopy cover and possible increased regeneration of palatable species. On a landscape level, habitats would exhibit a reduction in overall habitat quality, ecological health, and resiliency as the result of major, widespread wildfires resulting in conversion to herbaceous communities. These habitat changes would result in a reduction of vegetation community structure and overall suitability of habitats for special status species.
Alternative E	Special status species would be specifically assessed, based on species-specific desired future conditions, and compared to overall habitat conditions and identification of causal factors for declines. On a watershed level, restoration activities would result in higher quality forage, increased cover and vegetation structure, and increased habitat quality for special status species. On a landscape level, restoration activities to achieve appropriate ranges of vegetation conditions would improve special status species habitats by reducing habitat degradation and fragmentation, and promoting ecological health and resiliency.

Table S-2 (Continued)

WILD HORSES	
Goal – Maintain and manage healthy and genetically viable wild horses inside herd management areas within appropriate management levels to ensure a thriving natural ecological balance while preserving a multiple use relationship with other uses and resources.	
Alternative A	Alternative A would maintain several herd management areas that possess marginal or inadequate habitat to sustain wild horse populations at a level that would ensure genetic viability of the herd, thereby resulting in a high probability for continued conflicts with other resources, conflicts with private land owners, and occasional starvation and dehydration of wild horses.
Alternative B	Wild horse populations would be brought into balance with the available habitat resources needed to sustain genetically viable herds and prevent damage to the environment and surrounding resources. Vegetation treatments would, in the long term, enhance habitat conditions within the herd management areas to ensure the sustainability of healthy herds maintained at appropriate management levels.
Alternative C	Wild horse populations would be brought into balance with the available habitat resources needed to sustain genetically viable herds and prevent damage to the environment and surrounding resources. Alternative C, however, would likely have greater impacts and risks to wild horse populations than Alternative B over the long term due to increased potential for major wildfires.
Alternative D	The passive management approach in Alternative D for the existing 24 herd management areas and absence of fire management would result in rapid deterioration of ecological systems within these areas and likely starvation of many animals as populations increase beyond the support level of their habitat.
Alternative E	Wild horse populations would be brought into balance with the available habitat resources needed to sustain genetically viable herds and prevent damage to the environment and surrounding resources. Vegetation treatments would, in the long term, enhance habitat conditions within the herd management areas to ensure the sustainability of healthy herds maintained at appropriate management levels.
CULTURAL RESOURCES	
Goal – Identify, protect, and classify at-risk archaeological resources, significant historic properties, and cultural landscapes.	
Alternative A	Under Alternative A, cultural resources would continue to be managed for future resource use allocations. Indirect impacts associated with off-highway vehicle use, wild horses, livestock grazing, and recreational activities would continue to occur under existing management.
Alternative B	There would be a higher level of protection of cultural resources through use allocations, with 100 percent of the sites determined eligible to the National Register of Historic Places allocated and managed for Conservation, Scientific, and/or Public Use, and the designation of 11 new ACECs. There also would be more protection of cultural resources than Alternative A due to the decrease in lands open to off-highway vehicle use, wild horses, and livestock grazing. The level of protection from impacts associated with fire management would be greater than Alternative A, whereas the level of protection from impacts associated with recreation activities would be lower than Alternative A.
Alternative C	Cultural resource use allocations would provide greater protection of cultural resources than Alternative A; however, there would be a lower level of protection compared to Alternative B since more sites would be allocated as Discharged from Management. The decrease of lands open to off-highway vehicle use would provide more protection of cultural resources than Alternative A, but not to the extent of Alternative B. The level of protection from impacts associated with recreation and fire management would be lower than Alternatives A and B.
Alternative D	More cultural resources would be allocated and managed for Conservation Use, which would provide a higher level of protection compared to Alternatives B and C. The level of protection of cultural resources from off-highway vehicle use, recreation, and livestock grazing would be greater than Alternatives A, B, and C. Under this alternative, fire management activities would pose a higher risk to cultural resources than Alternatives A, B, and C.
Alternative E	Management of cultural resources would be the same as Alternative B. The level of protection from recreation activities would be greater than Alternatives A, B, and C, but not to the extent of Alternative D.
PALEONTOLOGICAL RESOURCES	
Goal – Identify and manage at-risk paleontological resources (scientific value), preserve and protect vertebrate fossils through best science methods, and promote public and scientific use of invertebrate and paleobotanical fossils.	
Alternative A	Paleontological resources would be managed for future use allocations. No registration system would be in place for trilobite collecting. The amount of unauthorized collecting of common invertebrate fossils (e.g., trilobites) and impacts associated with off-highway vehicle use would continue to increase as recreation and visitor use increases.
Alternative B	Paleontological resources would be provided a higher level of protection under this alternative because they would be allocated and managed for Scientific, Conservation, and/or Public Use. An increase in the number of acres withdrawn from mineral entry and a decrease in lands open to off-highway vehicle use would reduce impacts to paleontological resources. The no-fee registration system would increase the protection of known trilobite localities by tracking the amount of use and associated impacts.

Table S-2 (Continued)

Alternative C	Management of paleontological resources would be the same as Alternative A, with the exception of the registration system. The fee-based registration system could reduce the number of trilobite collectors, as well as increase the protection of trilobite collecting localities and associated impacts by tracking the amount of use and associated impacts. The decrease in lands open to off-highway vehicle use would reduce impacts to paleontological resources, but not to the extent of Alternative B.
Alternative D	Management of paleontological resources would be the same as Alternative B, with the exception of trilobite collecting. Under this alternative, all trilobite collecting localities would be closed, which would provide a higher level of protection of these fossils compared to Alternatives A, B, and C. The increase in lands closed to off-highway vehicle use would reduce impacts to paleontological resources.
Alternative E	Paleontological resources would be provided a higher level of protection under this alternative because they would be allocated and managed for Scientific, Conservation, and/or Public Use. An increase in the number of acres withdrawn from mineral entry and a decrease in lands open to off-highway vehicle use would reduce impacts to paleontological resources. The no-fee registration system would increase the protection of known trilobite localities by tracking the amount of use and associated impacts.
VISUAL RESOURCES	
Goal – Manage public land actions and activities consistent with District visual resource management class objectives.	
Alternative A	Management prescriptions for Class I and II areas (approximately 1.09 million acres and 326,000 acres, respectively) would continue to preserve the scenic character of these lands. Although unclassified areas totaling approximately 3.6 million acres would be addressed on a site-specific project level, there potentially could be impacts by not having a comprehensive framework for addressing visual resources in place, in the old Egan Resource Area. Continued designation of areas open to cross-country off-highway vehicle use would result in visual impacts through surface disturbances and impacts to air quality.
Alternative B	Management prescriptions under this alternative would increase the amount of land in Visual Resource Management Class II by over 2.2 million acres. Having classifications for all lands within the District would allow for a more comprehensive framework for preserving and mitigating impacts to visual resources. Maximizing the use of prescribed fire would create short term visual impacts that would diminish in the long term after treatments are completed.
Alternative C	Management prescriptions under this alternative would increase the amount of land in Visual Resource Management Class II by approximately 2.03 million acres. Having classifications for all lands within the District would allow for a more comprehensive framework for preserving and mitigating impacts to visual resources. Utility corridor widths of three miles and the location of the Spring Valley utility corridor adjacent to Highway 893 would create greater impacts in localized areas. Suppression of wildfires would reduce impacts from fire in the short term until wildland fires became impossible to suppress, which could lead to greater long-term impacts.
Alternative D	Management prescriptions under this alternative would increase the amount of land in Visual Resource Management Class II by almost 10 million acres. By identifying all areas as either Class I or II, substantial restrictions would be placed on activities that could be allowed under other resource management activities or increase the potential mitigation measures that would be required. The fact that there would be no new land use authorizations, such as rights-of-way, also would reduce impacts in the short and long term. A policy of minimal fire suppression would create short term visual impacts which would increase over the long term as catastrophic fires occur.
Alternative E	Management prescriptions under this alternative would increase the amount of land in Visual Resource Management Class II by over 2.1 million acres. Having classifications for all lands within the District would allow for a more comprehensive framework for preserving and mitigating impacts to visual resources. Maximizing the use of prescribed fire and managed natural fire would create short term visual impacts that would diminish in the long term after treatments are completed.
LANDS AND REALTY	
Goal 1 – Manage public lands in a manner that allows the retention of public land with high resource values and consolidates public land patterns to ensure effective administration and improve resource management. Make available for disposal public lands that promote community development. Utilize withdrawal actions with the least restrictive measures and minimum size necessary to accomplish the desired purpose.	
Alternative A	Approximately 28,531 acres are identified for possible disposal and 14,770 acres are identified for withdrawal. This management direction does not identify additional lands for possible disposal that would meet the objectives of BLM, benefiting communities, or the Lincoln County Conservation, Recreation, and Development Act of 2004. There would not be a proactive effort toward identifying areas of sensitive or high resource values for withdrawal from entry.

Table S-2 (Continued)

Alternative B	Approximately 87,834 acres would be available for possible disposal and approximately 64,156 acres would be withdrawn. Watershed analyses and subsequent restoration plans would identify lands to be retained as critical habitat for threatened or endangered species or habitat for other special status species. Withdrawing these sensitive and high resource value areas from surface and mineral entry would reduce land available for disposal as compared to Alternative A, but the removal of requirements pertaining to the retention of big game habitat, upland game habitat, and wild horse herd management areas would allow more flexibility in conducting lands and realty actions.
Alternative C	Approximately 288,744 acres would be available for possible disposal and approximately 200,243 acres would be withdrawn. The amount of land identified for potential disposal in Lincoln County exceeds the amount stipulated in the Lincoln County Conservation, Recreation, and Development Act of 2004. Watershed analyses and subsequent restoration plans would identify lands to be retained as critical habitat for threatened or endangered species. Withdrawing these sensitive and high resource value areas from surface and mineral entry would reduce land available for disposal as compared to Alternative A, but the removal of requirements pertaining to the retention of big game habitat, upland game habitat, wild horse herd management areas, special status species habitats, wetlands and riparian areas would allow more flexibility in conducting lands and realty actions.
Alternative D	Approximately 12,790 acres would be available for possible disposal and withdrawal. Because there would be no net loss of acreage managed by the BLM, no disposals would be available to occur to promote community development, unless they were offset by acquisitions. This would limit the ability of BLM to dispose of land for community and economic development, or for other purposes. Because requests for new withdrawals, withdrawal relinquishments, or modifications would be processed on a case-by-case basis, there would not be a proactive effort toward identifying areas of sensitive or high resource values for withdrawal from entry.
Alternative E	Approximately 95,677 acres would be identified as available for possible disposal and approximately 71,999 acres would be withdrawn. Watershed analyses and subsequent restoration plans would identify lands to be retained as critical habitat for threatened or endangered species. Withdrawing these sensitive and high resource value areas from surface and mineral entry would serve to reduce the amount of land available for possible disposal as compared to Alternative A, but the removal of requirements pertaining to the retention of big game habitat, upland game habitat and wild horse herd management areas would allow more flexibility in conducting lands and realty actions.
Goal 2 – Meet public needs for use authorizations such as rights-of-way, permits, leases, and easements while avoiding or minimizing adverse impacts to other resource values.	
Alternative A	Alternative A allows flexibility in land use authorizations while encouraging co-location of facilities. By not identifying new communication sites or 0.5-mile wide corridors, the location of future rights-of-way and communication sites would not be addressed proactively and could take longer to occur by being addressed on a case-by-case basis under site-specific NEPA analyses.
Alternative B	Alternative B would allow a degree of flexibility in land use authorizations while requiring co-location of facilities to a greater extent. The proactive identification of new 0.5-mile wide corridors and communication sites would allow more flexibility and timeliness in addressing future land use authorization needs.
Alternative C	Alternative C would allow a degree of flexibility in land use authorizations while encouraging co-location of facilities. The proactive identification of new corridors and communication sites would allow more flexibility and timeliness in addressing future land use authorization needs. Presumably, the 3-mile width of designated utility corridors would allow for co-location of more rights-of-way within utility corridors.
Alternative D	Limitations on new land use authorizations, and the closure of sites within migratory bird corridors and visually sensitive sites would greatly restrict lands and realty actions in Alternative D. The possible elimination of existing communication sites would further reduce the ability of the lands and realty program to address future needs.
Alternative E	Alternative E would allow a degree of flexibility in land use authorizations while encouraging co-location of facilities. The proactive identification of new 0.5-mile-wide corridors and communication sites would allow more flexibility and timeliness in addressing future land use authorization needs.
RENEWABLE ENERGY	
Goal – Provide opportunities for development of renewable energy sources such as wind, solar, biomass, and other alternative energy sources while minimizing adverse impacts to other resources such as wildlife and visual resources.	
Alternative A	The current management policy of evaluating and authorizing renewable energy projects on a case-by-case basis does not provide the opportunity to develop management strategies for anticipated future conditions nor a consistent approach to issuing land use authorizations. It also would not prevent the preemptive use of water resources that could be used for renewable energy, thereby potentially reducing renewable energy development.

Table S-2 (Continued)

Alternative B	Identification of areas of high potential for renewable energy development may help to facilitate wind and solar energy development. Approximately 201,000 acres of potential wind development areas and approximately 6.77 million acres of potential solar development areas are identified. The management direction would address issues as they arise, but would not provide the opportunity to develop management strategies for anticipated future conditions. It also would not prevent the preemptive use of water resources that could be used for renewable energy, thereby potentially reducing renewable energy development.
Alternative C	Identification of areas of high potential for renewable energy development may help to facilitate wind and solar energy development. Approximately 203,000 acres of potential wind development areas and approximately 6.77 million acres of potential solar development areas are identified. The management direction would address issues as they arise, but would not provide the opportunity to develop management strategies for anticipated future conditions. It also would not prevent the preemptive use of water resources that could be used for renewable energy, thereby potentially reducing renewable energy development.
Alternative D	Under Alternative D, renewable energy development would be severely restricted through the prohibition on new land use authorizations.
Alternative E	Identification of areas of high potential for renewable energy development may help to facilitate wind and solar energy development. Approximately 205,000 acres of potential wind development areas and approximately 6.77 million acres of potential solar development areas are identified. The management direction would address issues as they arise, but would not provide the opportunity to develop management strategies for anticipated future conditions. It also would not prevent the preemptive use of water resources that could be used for renewable energy, thereby potentially reducing renewable energy development.
TRAVEL MANAGEMENT AND OFF-HIGHWAY VEHICLE USE	
Goal – Provide and maintain suitable access to public lands. Manage off-highway vehicle use to protect resource values, promote public safety, provide off-highway vehicle opportunities where appropriate, and minimize conflict.	
Alternative A	The current management program addresses issues as they arise and on a case-by-case basis. Continuation of an open designation for the majority of the District provides for the greatest accessibility but would result in increased conflict between other resource users and off-highway vehicle users over time.
Alternative B	Alternative B would have proactive management and maintenance of the roads and trails in the District. As the existing road system is evaluated on a watershed basis, roads potentially would be closed or limited. Overall, this management could decrease access by motorized vehicles in the short term and possibly in the long term depending on whether or not roads were permanently closed. Off-highway vehicle use opportunities would be impacted through the elimination of areas open to cross-country off-highway vehicle use.
Alternative C	Alternative C would have proactive management and maintenance of the roads and trails in the District. As the existing road system is evaluated on a watershed basis, roads potentially would be closed or limited. Overall, this management could decrease access by motorized vehicles in the short term and possibly in the long term depending on whether or not roads were permanently closed. Off-highway vehicle use opportunities would be impacted through the reduction of areas open to cross-country off-highway vehicle use to approximately 32,000 acres.
Alternative D	Alternative D would substantially restrict motorized travel in the District in the short and long term. The lack of new land authorizations would reduce accessibility in the long term.
Alternative E	The elimination of cross-country off-highway vehicle use and the prioritization of road and trail designations through an updated transportation plan would have short- and long-term impacts to travel management, but would reduce off-highway vehicle use opportunities. The designation of 734,000 acres emphasizing motorized recreation on designated roads and trails within Special Recreation Management Areas would help to offset the elimination of areas open to cross-country off-highway vehicle use.
RECREATION	
Goal – Provide quality settings for developed and undeveloped recreation experiences and opportunities while protecting resources.	
Alternative A	As recreation use continues to increase over time, the limited number of recreation sites eventually would lead to increased competition for recreation opportunities. With only one special recreation management area on the District and no further creation of developed recreation sites, the ability to manage recreation as a primary objective in areas with high recreation potential would be constrained.
Alternative B	Alternative B would constitute a comprehensive program that addresses the trend of increasing recreational use as well as providing the opportunity to develop management strategies for anticipated future conditions. Nine Special Recreation Management Areas totaling approximately 2.68 million acres would be designated. Elimination of areas designated as open to cross-country off-highway vehicle use could reduce motorized recreational opportunities.

Table S-2 (Continued)

Alternative C	Alternative C would constitute a comprehensive program that would address the trend of increasing recreational use as well as providing the opportunity to develop management strategies for anticipated future conditions. Ten Special Recreation Management Areas totaling approximately 3.31 million acres would be designated. Reduction of areas designated as open to cross-country off-highway vehicle use could reduce motorized recreational opportunities.
Alternative D	The spectrum of recreation opportunities would be greatly reduced under this alternative as there would be no Special Recreation Management Areas and all existing developed recreation sites would be eliminated.
Alternative E	Alternative E would constitute a comprehensive program that addresses the trend of increasing recreational use as well as providing the opportunity to develop management strategies for anticipated future conditions. Nine Special Recreation Management Areas totaling approximately 2.68 million acres would be designated. Elimination of areas designated as open to cross-country off-highway vehicle use could reduce motorized recreational opportunities, while designating motorized trails could enhance recreation opportunities.
LIVESTOCK GRAZING	
Goal – Manage the public lands to provide for a level of livestock grazing consistent with multiple use, sustained yield, and watershed function and health.	
Alternative A	Approximately 11.2 million acres would remain open to grazing under existing management on 235 allotments, subject to potential land sales currently authorized for possible disposal.
Alternative B	Approximately 3.6 million acres of additional grazing area affecting 189 total allotments would be closed to grazing for desert tortoise habitat, bighorn sheep habitat, and new ACECs (beyond the 212,500 acres already closed in the existing desert tortoise ACECs) resulting in long-term impacts to livestock grazing. Vegetation treatments and protection of freshly seeded areas also could temporarily affect grazing on substantial areas during the treatment process causing short-term impacts. It is expected, however, that increased forage production on previously treated areas would offset temporary reductions in these allotments.
Alternative C	Approximately 11.2 million acres would remain available for grazing in 235 existing allotments, subject to potential land sales of up to 288,744 acres. These areas would be closed to grazing when they are sold. Long-term fire impacts to grazing would be substantial. Vegetation treatments and protection of freshly seeded areas also could temporarily affect grazing on substantial areas during the treatment process, but it is expected that increased forage production on previously treated areas would offset temporary reductions in these allotments.
Alternative D	Elimination of the livestock grazing program within the District would constitute a major change in policy with attendant impacts to livestock grazing, other resource uses, and users.
Alternative E	Approximately 11.2 million acres would remain available for grazing in 235 existing allotments, subject to potential land sales of up to 114,200 acres. These areas would be closed to grazing when they are sold. Sheep and goat grazing would be affected on approximately 2.96 million acres in 49 existing allotments. Vegetation treatments and protection of freshly seeded areas also could temporarily affect grazing on substantial areas during the treatment process, but it is expected that increased forage production on previously treated areas would offset temporary reductions in those allotments.
WOODLAND AND NATIVE PLANT PRODUCTS	
Goal – Provide opportunities for traditional and non-traditional uses of vegetation products on a sustainable, multiple-use basis.	
Alternative A	Current supplies of woodland and native plant products including fuelwood, posts and poles, Christmas trees, pinyon pine nuts, various native seeds, and live plants of selected species for transplantation are adequate to meet existing demands. It is expected that availability of these woodland products would continue to exceed the expected demand.
Alternative B	Alternative B would expand the number of species permitted for use as fuelwood, posts and poles, and Christmas trees, providing a wider opportunity for personal and commercial use. The increased availability is not likely to affect the overall resource supply for any of the species involved. Availability of woodland products would exceed the expected demand. On a long-term basis, the production of woodland products from restored and resilient communities is expected to exceed current levels.
Alternative C	Alternative C would expand the number of species permitted for use as fuelwood, posts and poles, and Christmas trees and areas in which these products could be collected, thus, providing a greater opportunity for personal and commercial use. The increased availability is not likely to affect the overall resource supply for any of the species involved. Availability of woodland products would exceed the expected demand until major fires eliminated large blocks of pinyon-juniper woodlands.
Alternative D	It is highly probable that major fires at an early date under this alternative would substantially reduce the long-term supply of woodland products. However, the harvest constraints under Alternative D also would drastically reduce the demand.

Table S-2 (Continued)

GEOLOGY AND MINERAL EXTRACTION	
Leasable Minerals	
Goal 1 – Allow for meeting the Nation's energy needs while providing environmentally responsible production of fluid leasable minerals, and geophysical exploration for energy resources on Public Lands.	
Alternative E	Alternative E would expand the number of species permitted for use as fuelwood, posts and poles, and Christmas trees, providing a greater opportunity for personal and commercial use. The increased availability is not likely to affect the overall resource supply for any of the species involved. Availability of woodland products would continue to exceed the expected demand on a long-term basis. On a long-term basis, the production of woodland products from restored and resilient communities is expected to exceed current levels.
Alternative A	The total acreage open to fluid mineral leasing would be about 90 percent of the District. Most of the closed areas are non-discretionary closures for designated wilderness or Wilderness Study Areas and not subject to the management of the Ely Field Office. Proposed discretionary closures would be less than 0.5 percent of the District.
Alternative B	The total acreage open to fluid mineral leasing would be about 89 percent of the District. Most of the closed areas are non-discretionary closures for designated wilderness or Wilderness Study Areas and not subject to the management of the Ely Field Office. Proposed discretionary closures would be less than 2 percent of the District.
Alternative C	The total acreage open to fluid mineral leasing would be about 87 percent of the District. Most of the closed areas are non-discretionary closures for designated wilderness or Wilderness Study Areas and not subject to the management of the Ely Field Office. Proposed discretionary closures would be about 3 percent of the District and are due to additional acreage closed for community land withdrawals.
Alternative D	The entire District would be closed to new leasing, but existing leases would be honored. The effects would be to preclude exploration and development (except on existing leases) and result in the loss of the resource available to the country, loss of potential lease bonus and rental revenue, loss of potential production royalties and property taxes, and other losses to related economic activity in the District. If no discoveries are made on existing leases, the leases would expire over time resulting in a total cessation of fluid mineral activities.
Alternative E	The total acreage open to fluid mineral leasing would be about 89 percent of the District. Most of the closed areas are non-discretionary closures for designated wilderness or Wilderness Study Areas and not subject to the management of the Ely Field Office. Proposed closures would be about 1 percent of the District.
Goal 2 – The development of solid leasable minerals would occur in a manner to prevent undue and unnecessary degradation.	
Alternative A	The total acreage open to solid mineral leasing would be about 90 percent of the District. Most of the closed areas are non-discretionary closures for designated wilderness or Wilderness Study Areas and not subject to the management of the Ely Field Office. Proposed discretionary closures would be about 0.5 percent of the District.
Alternative B	The total acreage open to solid mineral leasing would be about 89 percent of the District. Most of the closed areas would be non-discretionary closures for designated wilderness or Wilderness Study Areas and not subject to the management of the Ely Field Office. Proposed discretionary closures would be slightly less than 2 percent of the District.
Alternative C	The total acreage open to solid mineral leasing is about 87 percent of the District. Most of the closed areas are non-discretionary closures for designated wilderness or Wilderness Study Areas and not subject to the management of the Ely Field Office. Proposed discretionary closures would be slightly less than 4 percent of the District and is due to additional acreage closed for community land withdrawals.
Alternative D	The entire District would be closed to leasing of solid minerals and discretionary closures would comprise almost 91 percent of the District. The closures would preclude development of solid mineral resources.
Alternative E	The total acreage open to solid mineral leasing would be about 89 percent of the District. Most of the closed areas would be non-discretionary closures for designated wilderness or Wilderness Study Areas and not subject to the management of the Ely Field Office. Proposed discretionary closures would be about 1 percent of the District.
Locatable Minerals	
Goal – Allow development of locatable minerals in a manner to prevent undue and unnecessary degradation.	
Alternative A	The total acreage open to locatable minerals would be about 90 percent of the District. Most of the withdrawn areas would be non-discretionary withdrawals for designated wilderness or Wilderness Study Areas and not subject to the management of the Ely Field Office. Proposed discretionary withdrawals would be about 0.5 percent of the District.

Table S-2 (Continued)

Alternative B	The total acreage open to locatable minerals would be about 89 percent of the District. Most of the withdrawn areas would be non-discretionary withdrawals for designated wilderness or Wilderness Study Areas and not subject to the management of the Ely Field Office. Proposed discretionary withdrawals would be slightly less than 2 percent of the District.
Alternative C	The total acreage open to locatable minerals would be about 87 percent of the District. Most of the withdrawal areas would be non-discretionary withdrawals for designated wilderness or Wilderness Study Areas and not subject to the management of the Ely Field Office. Proposed discretionary withdrawals would be slightly less than 4 percent of the District and are due to additional acreage closed for community land withdrawals.
Alternative D	The acreage open to locatable minerals would be about 37 percent of the District. Discretionary withdrawals would be about 63 percent of the District. The withdrawal of almost two-thirds (including non-discretionary withdrawals) of the District would cause severe limitations on access to potential developable locatable mineral deposits. Inability to explore and develop locatable minerals would result in loss of the resource to the country, loss of tax revenue, and other losses to related economic activity in the District.
Alternative E	The total acreage open to locatable minerals would be about 89 percent of the District. Most of the proposed withdrawal areas would be non-discretionary withdrawals for designated wilderness or Wilderness Study Areas and not subject to the management of the Ely Field Office. Proposed discretionary withdrawals would be about 1 percent of the District.
Saleable Minerals	
Goal – Allow development of saleable minerals in a manner that would prevent undue and unnecessary degradation, meet public demand, and minimize adverse impacts to other resource values.	
Alternative A	The total acreage open to saleable mineral disposal would be about 88 percent of the District. Most of the closed areas are non-discretionary closures for designated wilderness or Wilderness Study Areas and not subject to the management of the Ely Field Office. Proposed discretionary closures would be about 2.5 percent of the District.
Alternative B	The total acreage open to saleable mineral disposal would be about 84 percent of the District. Most of the closed areas would be non-discretionary closures for designated wilderness or Wilderness Study Areas and not subject to the management of the Ely Field Office. Proposed discretionary closures would be less than 7 percent of the District.
Alternative C	The total acreage open to saleable mineral disposal would be about 82 percent of the District. Most of the closed areas would be non-discretionary closures for designated wilderness or Wilderness Study Areas and not subject to the management of the Ely Field Office. Proposed discretionary closures would be about 8 percent of the District and is due to additional acreage closed for community land withdrawals.
Alternative D	The entire District would be closed to disposal of saleable minerals and discretionary closures would comprise about 91 percent of the District. The closure would preclude development of saleable mineral resources and result in the loss of the resource to the public and the loss of related economic activity.
Alternative E	The total acreage open to saleable mineral disposal would be about 84 percent of the District. Most of the closed areas would be non-discretionary closures for designated wilderness or Wilderness Study Areas and not subject to the management of the Ely Field Office. Proposed discretionary closures would be slightly more than 6 percent of the District.
WATERSHED MANAGEMENT	
Goal – Manage watersheds to restore and maintain resistance and resiliency to disturbances.	
Alternative A	Treatments would not occur at a scale and rate adequate to address the magnitude and extent of ecological problems on the District. Thus, the rate of treatment under this alternative, when combined with actions proposed for vegetation, fish and wildlife, special status species, wild horses, livestock grazing, and fire management, has a low probability of achieving noticeable gains in District-wide resiliency.
Alternative B	The restoration approach of Alternative B, when combined with the actions proposed for vegetation, fish and wildlife, special status species, wild horses, livestock grazing, and fire management, addresses all of the watershed health management issues on the District with the scale of treatments needed to reverse the historic deterioration in rangeland health and restore vegetation resiliency.
Alternative C	When combined with the actions proposed for vegetation, fish and wildlife, special status species, wild horses, livestock grazing, and fire management, treatments would occur at a scale and rate that would reverse the historic deterioration in rangeland health and restore resiliency of vegetation communities. However, the narrower range of desired conditions (with greater emphasis on the herbaceous state) in this alternative as compared to Alternative B would require more effort and more frequent treatments to achieve and maintain. The higher probability for widespread fire over the long term also would necessitate greater efforts for fire suppression and rehabilitation as opposed to planned treatments.

Table S-2 (Continued)

Alternative D	Treatments would not occur at a scale and rate, when combined with the actions proposed for vegetation, fish and wildlife, special status species, wild horses, livestock grazing, and fire management, that would reverse the historic deterioration in rangeland health and restore resiliency of vegetation communities. The long-term consequences would be more dramatic and severe than in other alternatives due to the differences in fire management and other programs.
Alternative E	The restoration approach of Alternative E, when combined with the actions proposed for vegetation, fish and wildlife, special status species, wild horse, livestock grazing, and fire management, addresses all of the watershed health management issues on the District with the scale of treatments needed to reverse the historic deterioration in rangeland health and restore vegetation resiliency.
FIRE MANAGEMENT	
Goal – Provide an appropriate management response to all wildland fires, with emphasis on firefighter and public safety, consistent with overall management objectives.	
Alternative A	Continued implementation of the existing Ely Managed Natural and Prescribed Fire Plan would allow case-by-case decisions based in part on where the fire occurs in relation to where in the District such fire would be considered beneficial or detrimental. This approach allows widespread use of managed beneficial wildfires (fire use) across the entire District, but limits the application of prescribed burning.
Alternative B	Implementation of this alternative would result in a major increase in the use of fire after watershed resilience is improved throughout the watersheds in the District. Fire use and prescribed fire would be implemented year-round to meet resource objectives in accordance with the revised Ely Fire Management Plan (BLM 2004a). An increase in mechanical, biological, and herbicide use may be necessary to meet management goals prior to expanding the use of fire.
Alternative C	Full suppression of fires within the District would be practical only on a short-term basis. Over the long term, the attempts at full suppression would probably lead to catastrophic widespread fires resulting in long-term ecological damage and increased risk to human safety and property.
Alternative D	Buildup of fuels would occur throughout the District and eventually lead to catastrophic fires, resulting in long-term ecological damage and increased risk to human safety and property. It is expected that such fires would occur earlier in time with this alternative than with Alternative C.
Alternative E	Implementation of this alternative would result in a major increase in the use of fire after watershed resilience is improved throughout the watersheds in the District. Fire use and prescribed fire would be implemented year-round to meet resource objectives in accordance with the revised Ely Fire Management Plan (BLM 2004a). An increase in herbicide use also may be necessary to meet management goals prior to expanding the use of fire.
NOXIOUS AND INVASIVE WEED MANAGEMENT	
Goal – Prevent the introduction and spread of noxious and invasive weeds. Control or eradicate existing populations.	
Alternative A	Weed control efforts historically have focused primarily on toxic and noxious weed species with less attention devoted toward the spread of annual invasive species such as cheatgrass, which provide usable forage during a short grazing season each spring. Current management includes emphasis on slowing and reversing the spread of these invasive species through application of integrated pest management methods. Under this alternative, the rate of spread of noxious and invasive weeds would increase in both the short and long term.
Alternative B	Alternative B would be similar to Alternative A in terms of weed management, but the substantial increase in vegetation treatments under this alternative would temporarily increase the risk of weed invasion and expansion in areas disturbed by treatment but reduce the vulnerability of these same areas on a long-term basis. Therefore, this alternative would reduce the rate of spread of noxious and invasive weeds on a long-term basis.
Alternative C	The level of vegetation treatments involved in Alternative C would be approximately the same as Alternative B. This alternative, like Alternative B, would reduce the long-term impacts of noxious and invasive weeds through vegetation treatments, but this would likely be offset by the increased probability of weed establishment and spread following major wildfire events.
Alternative D	Weed management would involve exclusion of some groups of herbicides. This would effectively reduce the capability to control several weed species and increase impacts associated with noxious and invasive weeds. The combination of weed management actions with other program actions under this alternative would not reduce the rate of spread of noxious and invasive weeds in the long term.
Alternative E	Alternative E involves a combination of weed management similar to Alternative A plus vegetation treatments at a substantially greater scale than Alternative A to restore vegetation resilience. On a long-term basis, this is expected to result in a substantial reduction in the risk of establishment and spread of noxious and invasive species.
SPECIAL DESIGNATIONS	
Goal – Evaluate areas of interest for special designation and appropriately manage those areas that meet necessary requirements.	
Alternative A	Approximately 212,500 acres would retain their designation as three ACECs.
Alternative B	Approximately 353,900 acres would be designated as three existing and 18 new ACECs.
Alternative C	Approximately 348,400 acres would be designated as three existing and 20 new ACECs.

Table S-2 (Continued)

Alternative D	All special designations would be eliminated, but with minimal activity in other management programs, no impacts to the sensitive resources are anticipated from other uses.
Alternative E	Approximately 347,900 acres would be designated as three existing and 18 new ACECs.
ECONOMIC AND SOCIAL CONDITIONS	
Goal – No program-specific goals have been identified for economic and social conditions or health and safety.	
Economic Conditions	
Alternative A	Alternative A would result in minor, long-term economic impacts (jobs, income, locally derived taxes, etc.) across the Ely District. Such impacts would intensify over time, accruing across the entire District, though not necessarily uniformly. The adverse economic impacts in Lincoln County would be masked by major, long-term economic growth associated with the Lincoln County Land Act. The Lincoln County Land Act impacts are unrelated to the RMP and would be undifferentiated across alternatives. Federal payments in lieu of taxes and grazing fees received by White Pine County would decline by as much as \$96,000 annually, but increase in Lincoln County. Changes in payments in lieu of taxes and grazing fees would be minor relative to the total budgets of the affected local governments.
Alternative B	Alternative B would result in minor, long-term enhancements of the local economy, e.g., 255 to 260 jobs, across the Ely District due to the added restoration funding, enhanced woodland commodity availability, and increases in big-game hunting. Gains would be tempered by long-term decreases in farm/ranch income from allotment closures in the Mojave Desert and bighorn sheep habitat. Lincoln County would see major, long-term economic growth triggered by the Lincoln County Land Act. Annual payments in lieu of taxes to White Pine County would be lower than at the present, but higher than under Alternative A. Payments in lieu of taxes would increase in Lincoln County. RMP-related impacts on local fiscal conditions would be minor and long-term relative to local budgets.
Alternative C	Alternative C would promote increased organized and developed recreation activity in the District, compared to Alternative A, and the development of tourism and recreation-oriented facilities by both the public and private sectors. Higher levels of organized use, in the form of truck and motorcycle events, would augment continued OHV use accommodated by a management emphasis to designate roads and trails for such use. The combined organized and dispersed recreation use would stimulate recreation spending in the region, providing added stimulus to local retail, eating and drinking, lodging and other such establishments, which would increase the number of local jobs in the affected industries.
Alternative D	Alternative D would result in major, long-term economic impacts, due to substantial reductions in ranch income, wildland fire suppression, and withdrawals of lands open for mineral and energy-related development. The latter could result in foregone short-term economic benefits associated with utility construction projects precluded by the lack of utility corridors. The Lincoln County economy would experience major, long-term economic growth associated with development of lands sold under the Lincoln County Land Act. Annual payments in lieu of taxes to White Pine County would be lower than at the present, but comparable to those under Alternative A. The provision for no net loss of public lands may delay or limit land disposal actions that would otherwise foster community and economic development, thereby impacting local fiscal budgets.
Alternative E	Alternative E would result in minor, long-term enhancements of the local economy, e.g., 255 to 260 jobs, across the Ely District due to the added restoration funding, stewardship contracting, increased woodland commodity production, and developed and organized recreation. Ranch income would be adversely impacted over the short term, but would increase over the long term. Annual payments in lieu of taxes to White Pine County would be lower than at the present, but would increase in Lincoln County. RMP-related impacts on local fiscal conditions would be minor and long term relative to local budgets.
Social Conditions	
Alternative A	Long-term moderate to major population declines in White Pine County and moderate to major population increases in Lincoln County are projected under Alternative A. Subsequently, housing demand and prices would fall in White Pine County, while increasing in Lincoln County. Residential development in Lincoln County would increase concerns about wildland fire risks. Continuation of current management practices would be widely perceived as unresponsive to public concerns regarding declining ecological health in the Great Basin and the implications for public land use.
Alternative B	Alternative B would increase regional population by 510 to 560 residents during restoration. Generally perceived as beneficial, the gains would be relatively more concentrated around Ely. By accelerating the pace of restoration and improved ecological health, Alternative B would contribute to potential long-term population growth over and above that under Alternative A. Higher population would bolster housing markets in White Pine County. Many would view the increased restoration funding levels favorably, but would be concerned about short-term impacts on lifestyles and personal use, and future management decisions as rangeland health standards are achieved. Alternative B may hold relatively stronger appeal to those favoring resource protection and restoration.

Table S-2 (Continued)

Alternative C	Alternative C would increase regional population by 190 to 210 residents during restoration. The gains and corresponding benefits on local housing markets would be concentrated around Ely. Indirect benefits from long-term commodity use, stewardship contracting, and expanded options for possible land disposal would provide minor, long-term social benefits. The management emphasis for Alternative C may hold less appeal to stakeholders desiring stronger resource protection, sportsmen, and those favoring commercial uses of woodland and native plant products than to interests promoting motorized recreation.
Alternative D	Alternative D would have little impact on regional population or housing markets, as compared to Alternative A. Alternative D carries forward several elements of Alternative A, but eliminates livestock grazing and places additional constraints on possible land disposal, mineral entry, and energy development that are viewed by residents as imperative to community and economic viability. Consequently, this alternative would hold relatively less appeal for area residents and local government officials than for those stakeholders whose specific areas of concern serve as the foundation for this alternative.
Alternative E	Alternative E would result in minor regional population increases of 510 to 560 residents during restoration, with corresponding long-term impacts on local housing markets. The gains would be relatively more concentrated around Ely. Additional social benefits may be realized from stewardship contracting, the fuels management/wildland fire risk reduction, and potential for developed recreation associated with possible land disposal. This alternative may hold relatively less appeal for those desiring maximum emphasis on resource protection and rangeland health restoration.
AMERICAN INDIAN ISSUES	
No specific impacts are compared. See Section 4.25 to identify specific issues and the sections in which they are addressed.	
ENVIRONMENTAL JUSTICE	
Goal – No program specific goals have been identified for environmental justice.	
Alternative A	No disproportionate adverse impacts to low-income populations were identified in conjunction with the resource programs, objectives, or management direction associated with Alternative A.
Alternative B	No disproportionate adverse impacts to low-income populations were identified in conjunction with the resource programs, objectives, or management direction associated with Alternative B.
Alternative C	No disproportionate adverse impacts to low-income populations were identified in conjunction with the resource programs, objectives, or management direction associated with Alternative C.
Alternative D	No disproportionate adverse impacts to low-income populations were identified in conjunction with the resource programs, objectives, or management direction associated with Alternative D.
Alternative E	No disproportionate adverse impacts to low-income populations were identified in conjunction with the resource programs, objectives, or management direction associated with Alternative E.
HEALTH AND SAFETY	
Goal – The goal of the Health and Safety program is to ensure that management decisions are protective of life and property.	
Alternative A	There would be a slight increase of risk to public health and safety because of an increased wildfire risk.
Alternative B	There would be a decrease of risk to public health and safety because of decreased wildfire risk.
Alternative C	There would be an increase of risk to public health and safety because of increased wildfire risk.
Alternative D	There would be a great increase of risk to public safety because of the increased wildfire risk and the potential for large destructive fires.
Alternative E	There would be a decrease of risk to public health and safety because of the decreased wildfire risk.

ABBREVIATIONS/ACRONYMS

ACEC	Area of Critical Environmental Concern
BLM	Bureau of Land Management
EIS	Environmental Impact Statement
MFP	Management Framework Plan
NEPA	National Environmental Policy Act
PM ₁₀	Particulate matter with an aerodynamic diameter of 10 microns or less
PM _{2.5}	Particulate matter with an aerodynamic diameter of 2.5 microns or less
RMP	Resource Management Plan
U.S.	United States

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1.0 INTRODUCTION

How to Read Chapter 1.0

Chapter 1.0 contains background information on the planning process and sets the stage for the information that is presented in the rest of the document. There are nine main sections in Chapter 1.0. They are:

- Purpose of and Need for Action
- Planning Area and Map
- Ely District Resource Management Plan (RMP)/Environmental Impact Statement (EIS) Overview
- Bureau of Land Management (BLM) Planning Process
- Planning Criteria
- Scoping Issues
- Management Framework and Implementation
- Relationships that are key to the Ely RMP/EIS
- Consistency with other Programs, Plans, and Policies

Management of the District at the watershed level with an emphasis on restoration of watershed function, and issues from public scoping are especially important to the entire planning process, as they serve as the main drivers in the formulation of management alternatives and the management actions within each alternative.

1.1 Purpose of and Need for Action

This RMP/EIS is being prepared to provide the Ely Field Office with a comprehensive framework for managing lands in the planning area under the jurisdiction of the BLM. The RMP provides a public document that specifies management policies and actions on these lands. Implementation-level planning and site-specific projects would then be completed in conformance with the broad provisions of the RMP. The RMP is needed to provide a land use plan consistent with evolving law, regulation, and policy.

Section 102 of the Federal Land Policy and Management Act presents the overall policy for planning the use of resources that occur on BLM-administered lands. The BLM is required to prepare land use plans that serve as the basis for all activities that occur on BLM-administered lands. "The national interest will be best realized if the public lands and their resources are periodically and systematically inventoried and their present and future use is projected through a land use planning process coordinated with other Federal and State planning efforts." Section 202 of the Federal Land Policy and Management Act requires that "the Secretary shall, with public involvement ... develop, maintain, and when appropriate, revise land use plans."

The purpose of the revised Ely RMP is to provide direction for management of renewable and nonrenewable resources found within the Ely District and to guide decision-making for future site-specific actions.

1.0 INTRODUCTION

The need for the action is to consolidate, update, and establish appropriate goals, objectives, management actions, priorities, and procedures, within a multiple-use management context, for all BLM public land resource programs administered by the Ely Field Office. This action is needed to update resource management direction to allow Ely Field Office managers to meet nationwide BLM goals and objectives and for their actions to be consistent with current BLM policy.

Across the country, the first generation of BLM land use plans was prepared in the late 1970s and early 1980s. Within the Ely District, one RMP and one Management Framework Plan (MFP) were prepared in this timeframe. In 1996, management of the Caliente Resource Area was transferred from the Las Vegas Field Office to the Ely Field Office. The Caliente Resource Area also was covered by a MFP. Even with periodic amendments, these three 15- to 20-year-old plans no longer meet the management needs of the Ely Field Office. Thus, the BLM is revising the three existing land use plans into a single RMP for the entire District. This combined plan is expected to serve the management direction needs of the Ely Field Office for the foreseeable future. The final Ely District RMP would remain in effect as long as the management direction contained in the Plan is valid in light of scientific understanding and current management needs. The Plan would be updated and amended periodically to maintain its effectiveness as long as practical. When the Plan reaches the end of its effective life, a new plan would be prepared. However, since the life of the Plan is dependent on many variables, it is not possible to estimate its duration.

The revised RMP will direct the Ely Field Office in resource management activities including leasing minerals such as oil and gas; construction of electrical transmission lines, gas pipelines, and roads; grazing management; recreation and outfitting; preserving and restoring wildlife habitat; selling or exchanging lands for the benefit of local communities; military use of the planning area; and conducting other activities that require land use planning decisions. The new RMP also is needed to facilitate implementation of the Great Basin Restoration Initiative, a regional initiative to implement actions to maintain or improve ecological health at the landscape scale. To address these management responsibilities, the Ely Field Office has undertaken a planning effort that emphasizes a collaborative approach where local, state, federal, and Tribal governments; the public; local user groups; and industry work with the BLM to identify appropriate multiple uses of the public lands.

In the past, project proposals would have been developed and implemented based upon boundaries of livestock grazing allotments. The Ely RMP/EIS will implement a policy change that directs BLM to plan and implement decisions based on watershed boundaries.

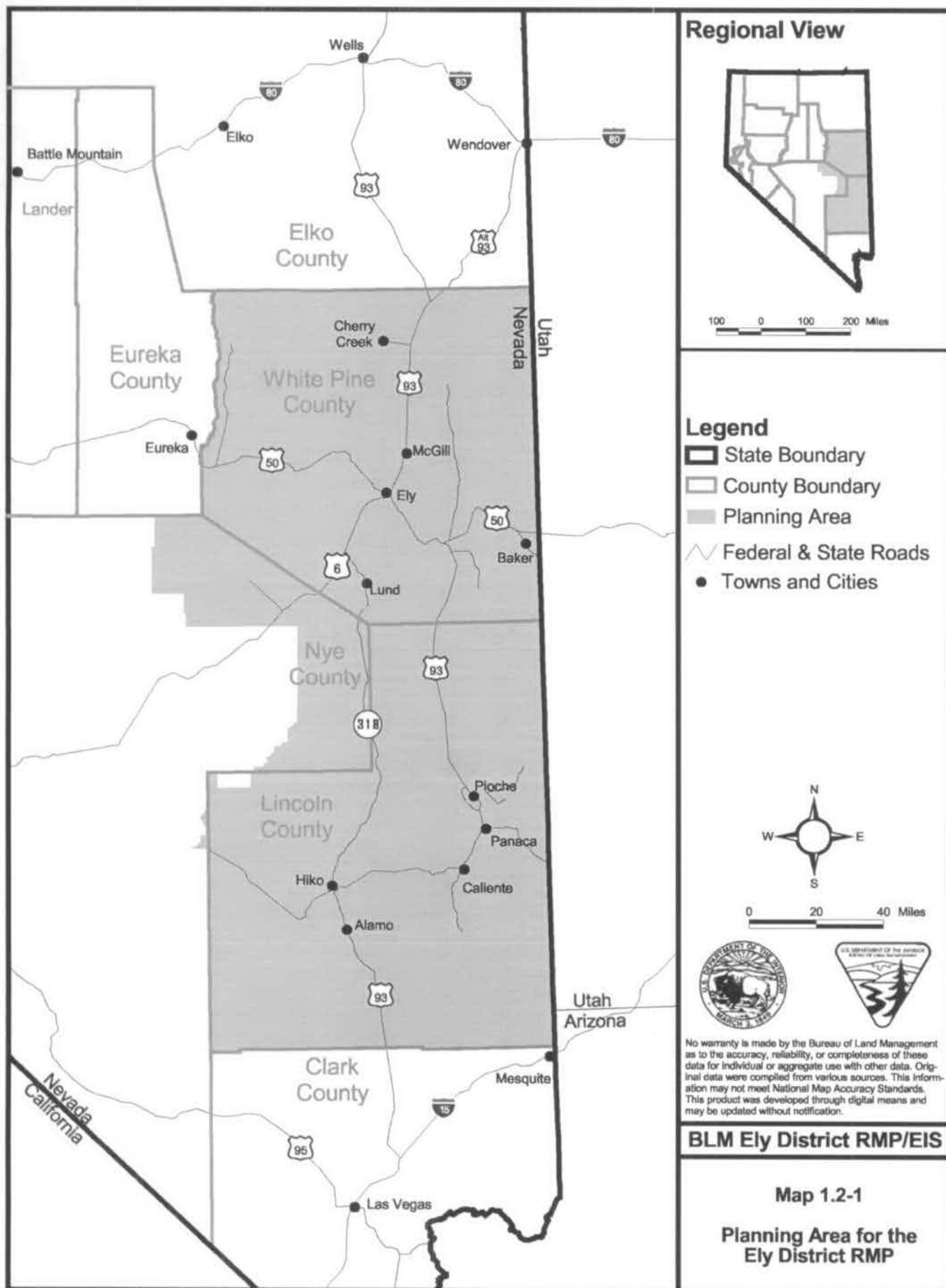
In the future, watershed analyses will be performed to determine if rangeland health standards are being met within a watershed. This involves an analysis of uses of vegetation by livestock, wildlife, and wild horses, as appropriate. It also involves analysis of other uses within the watershed. These include such things as: mineral exploration and/or development; off-highway vehicle use; hunting; and rights-of-way and corridor designations. If rangeland health standards are being met, the restoration plan (a portion of the watershed analysis) will propose projects and resource uses designed to maintain the healthy condition of the watershed. If standards are not being met, the restoration plan will propose projects and resource uses designed to improve the condition of the watershed.

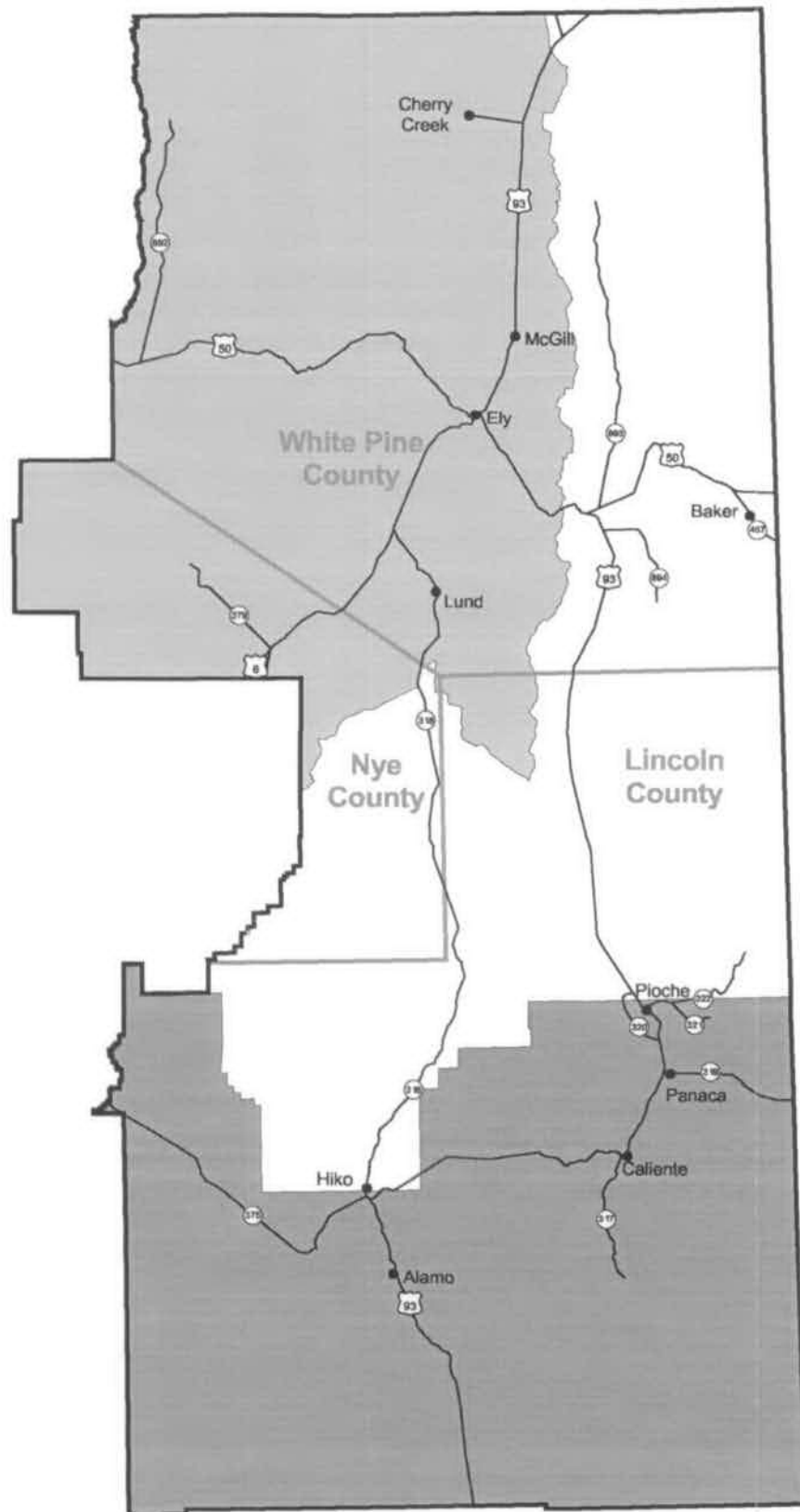
1.1 Purpose of and Need for Action

There are 61 watershed units within the planning area. It is expected that completion of watershed analyses, including restoration plans with proposed projects, on the 32 high priority watersheds will take approximately ten years. Completion of watershed analyses on the remaining 29 lower priority watersheds will take longer than ten years as more and more effort will be needed to implement projects proposed on the earlier analyzed watersheds.

1.2 Planning Area and Map

The planning area for the Ely District RMP/EIS consists of public lands in White Pine and Lincoln counties and a portion of Nye County in east-central Nevada (see **Map 1.2-1**). The District measures approximately 230 miles (north-south) by 115 miles (east-west). The Ely District currently is managed as a single administrative unit; however, the District previously was subdivided into three resource areas, Egan, Schell, and Caliente. Since these names still appear in publications and members of the public may be familiar with them, **Map 1.2-2** presents the boundaries of the previous administrative sub-units.





Regional View



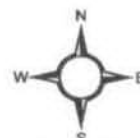
100 0 100 200 Miles

Legend

- Planning Area
- County Boundary
- Cities and Towns
- Federal & State Roads

Resource Areas

- Egan
- Schell
- Caliente



0 9 18 27 Miles



No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual or aggregate use with other data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed through digital means and may be updated without notification.

BLM Ely District RMP/EIS

Map 1.2-2

Boundaries of the Previous Administrative Sub-units

1.3 Ely District RMP/EIS Overview

1.3.1 BLM's Role

The BLM is responsible for managing 262 million acres of land, about one-eighth of the land in the United States (U.S.), and about 300 million additional acres of subsurface mineral resources. The BLM also is responsible for wildfire management and suppression on 388 million acres. The Ely Field Office, including the Caliente Field Station, manages 11.4 million acres in east-central Nevada.

The BLM administers public lands within a framework of numerous laws. The most comprehensive of these is the Federal Land Policy and Management Act of 1976. All BLM policies, procedures, and management actions must be consistent with the Federal Land Policy and Management Act and the other laws that govern use of the public lands. In the Federal Land Policy and Management Act, Congress established the principle of "multiple use" management, defined as "management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people." The Federal Land Policy and Management Act further specified that "the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values; that, where appropriate, will preserve and protect certain public lands in their natural condition; that will provide food and habitat for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use."

RMP Management Focus

The restoration and maintenance of healthy ecological systems within watersheds is a primary focus for the future management of the Ely District. Healthy ecological systems are geographically diverse and change over time. They are compatible with soil potential and are resilient to disturbance.

Resources and resource uses will be managed to restore or maintain ecological health. Certain resource management changes and active treatments may need to be implemented, in portions of watersheds, to accomplish this objective. Adaptive management will be pursued to avoid deteriorating conditions favoring invasive plants and catastrophic fires. Any projects will be implemented so as to result in a mosaic of vegetation within a watershed.

In the long term, natural disturbance (such as drought or fire) will occur and fewer treatments will be needed to maintain ecological health. The result will be a variety of vegetation phases within a watershed, which will provide diverse, healthy conditions for future generations.

1.3.2 Nevada BLM and Ely Field Office Visions

Fundamentals of sound resource management include a vision of the future, a set of goals, and a set of land health standards. These components are essential as a basis for guiding the development of all action alternatives. The Ely Field Office vision for the future and the RMP goals set the stage for all Field Office actions. The land health standards provide insight into the resource conditions needed for ecological sustainability upon which all resource uses are based.

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1.3.2.1 Nevada BLM Vision of the Future

The future of Nevada will to a large part be shaped by the future of public land management. BLM has a responsibility to the American people and the citizens of Nevada to conscientiously chart the future of public lands and resources. To that end, BLM-Nevada has undertaken an effort to describe desired common future for the state based on citizen input, predictions of the future, and known state and national trends.

Since the future of public lands is inextricably tied to the future of the people, economy, and environment of Nevada and the western U.S., the following description may in some cases go beyond what is perceived as BLM's mission. However, this vision for the future is intended to paint a picture that provides a context within which BLM can set specific management objectives, identify measurable performance goals, and prioritize workload. It is a future that BLM employees will strive to achieve together with our neighbors in Nevada and with the American people.

The Character of the Landscape

We envision a Nevada where there are large open spaces, providing the characteristic landscape for which the state is famous. We see some areas of Nevada that remain in their natural state for the enjoyment of future generations. We envision manmade structures concentrated in orderly corridors, rather than spread across the landscape. We see remote public lands as a place where silence has value. We see a place where agricultural and ranch lands remain a characteristic of the landscape. We envision public lands that are free of trash, litter, and man-made hazards, and a population that values such lands. We also see the public lands in a consolidated, manageable land pattern.

The Character of Our Communities

We envision a Nevada where communities are healthy and safe, and the quality of life is good. We would like to see a Nevada where 100 percent of our refuse is recycled, reducing the need for landfills and the spread of hazardous materials. We want to see economies that are healthy and sustainable for many generations to come. We want to see communities where multiple employment and entrepreneurial opportunities exist. We see a future that includes sufficient quantity and quality of water to sustain communities and natural resources. We see a Nevada where public lands will help to sustain communities and economies. We envision schools and educational opportunities that foster a land stewardship ethic among our citizens. We see a population that values the diversity of Nevada's communities, from the remote flavor of our ghost towns to the urban complexity of Las Vegas.

The Cultural Heritage and Social Values of Nevadans

We see a future that maintains the opportunity to pursue the western, rural lifestyle, and values agriculture and ranching as a way of life. We envision a future where historical, cultural, and scientific resources are valued and preserved so that all of us may experience them. We see environmental education as a key to helping our children value conservation in an era of rapid growth. We see a Nevada that encourages

American Indians to embrace their traditional cultural values. We see Nevada leading the nation in opportunities to view and experience healthy, wild, free-roaming horses and burros. And we see a strengthened environmental and conservation ethic among public land users.

The Condition of Natural Systems

We envision a future where all ecological systems function properly to provide clean air; clean water; and a healthy environment for plants, animals, and humans. We see a future where fire is recognized as a natural ecological process. We envision the BLM managing for healthy, productive, sustainable ecological systems. We see a focus on assuring that the riparian areas that are critical to life in Nevada are in a natural functioning condition. We see a proliferation of healthy, desired plant communities and a diversity of wildlife across the landscape, with a minimum of plants and animals on the list of threatened or endangered species.

The Use and Development of Natural Resources

We envision a future for Nevada where human activities have no irreversible impact on ecological systems and create no health or safety hazards. We expect all temporary adverse impacts to be remediated in a timely manner, and all surface disturbances minimized and reclaimed. We see an increased reliance on renewable resources that provide a source of food, energy, and raw materials on a sustainable basis. We see a future where recreation opportunities abound, and where people have multiple, diverse, and affordable recreation in close proximity to their homes. We see public lands that are kept open to multiple uses and that access to those lands is assured.

The Business Practices of BLM

We envision a future where employees and the public have easy access to a vast array of technology to synthesize raw data into meaningful information that can then be applied. We want to see BLM industry operate efficiently with high productivity and minimal waste. We expect partnerships with other agencies, groups, and individuals in managing the public lands to be part of everyday business. We see reduced duplication of effort among agencies and levels of government that ultimately leads to blurred administrative boundaries. We want to see BLM fully integrate technology into our business practices, with computer skills universal in the work force. We see BLM providing the best customer services to public land users, stakeholders, and the walk-in public. We see land management decisions based on the best scientific data available. We see BLM using all our employees effectively, bringing out the best in them as individuals, and providing them with a productive work environment.

1.3.2.2 Ely Field Office Vision of the Future

The Ely Field Office vision of the future reflects the statewide BLM vision and applies this to the local setting. The vision of the future provides a context for development of management objectives, standard practices, performance goals, and priorities in the Ely RMP to reach the long-term goal of healthy ecological systems while supporting sustained economic uses and local community needs. A future of resilient and diverse

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landscapes is one that Ely Field Office employees will strive to achieve together with our neighbors in eastern Nevada and the American people.

The restoration and maintenance of healthy ecological systems within watersheds is a primary focus for the future management of the Ely District. Healthy ecological systems are geographically diverse and change over time. They are compatible with soil potential and are resilient to disturbance.

Resources and resource uses would be managed to restore or maintain ecological health. Certain resource management changes and active treatments may need to be implemented, in portions of watersheds, to accomplish this objective. Adaptive management will be pursued to avoid deteriorating conditions favoring invasive plants and catastrophic fires. Any projects would be implemented so as to result in a mosaic of vegetation within a watershed.

In the long-term, natural disturbance (such as drought or fire) would occur and fewer treatments would be needed in order to maintain ecological health. The result would be a variety of vegetation phases within a watershed, which would provide diverse, healthy conditions for future generations.

1.3.3 Ely District Land Use Planning

The revised RMP is intended to be primarily programmatic in its management direction. It should be noted, however, that the RMP includes a number of implementation-level decisions. Plan maintenance will be conducted on an as-needed basis to reflect minor changes, refinements, or clarifications without changing the terms, conditions, or decisions of the approved RMP. "An amendment shall be initiated by the need to consider monitoring and evaluation findings, new data, new or revised policy, a change in circumstances or a proposed action that may result in a change in the scope of resource uses or a change in the terms, conditions and decisions of the approved plan" (43 Code of Federal Regulations 1610.5-5).

In addition to the legislative and procedural agency guidance for the preparation of the RMP, other initiatives and programs have contributed to the scope and management direction for this document. The ecological system function emphasis of the Great Basin Restoration Initiative and Healthy Forest Restoration Act of 2003, land management direction from the Lincoln County Conservation, Recreation, and Development Act of 2004, sage grouse management recommendations, and ongoing input from the Resource Advisory Councils have shaped BLM's analytical approach to the resource issues.

1.3.3.1 Great Basin Restoration Initiative/Eastern Nevada Landscape Restoration Project

In 1999, the Great Basin Restoration Initiative was introduced as an umbrella for a number of projects and actions underway to enhance the condition of public lands in the Great Basin, including the Ely District. The objective of the Great Basin Restoration Initiative is a long-term, landscape-scale improvement in ecological health. The Ely District RMP will provide direction to the Ely Field Office staff for implementation of the Great Basin Restoration Initiative within the District. The specific project in eastern Nevada is the Eastern Nevada Landscape Restoration Project.

There is a critical need to restore and maintain ecological diversity and resiliency within major portions of the Great Basin. The vegetation communities of the Great Basin have changed substantially over the past 150 years. Activities, such as livestock grazing, recreation, forest and woodland management, fire management, mineral exploration and mining, off-highway vehicle use and the inadvertent introduction of noxious weeds and exotic invasive species have contributed to the change of vegetation conditions. These changes have led, in many instances, to steadily increasing fuel loads; increased fire intensity, size, and frequency; subsequent loss of soil productivity and vegetation diversity; and deterioration of watersheds (i.e., soil erosion and reduced water quantity and quality). These conditions, and the increasing potential of further degradation, require management to provide options for future generations by maintaining ecological health of the landscapes in the Great Basin. Allowing the degradation to continue is unacceptable. Ecological (or landscape) health is the ability of the ecological system to maintain or restore itself in the face of disturbance. The vegetation on the landscape is a primary indicator of ecological health. The result of healthy vegetation is an ecological system that is resilient (able to recover its native vegetation state) or resistant (to not change vegetation state) when disturbed.

The Ely RMP will allow for future implementation of the Eastern Nevada Landscape Restoration Project, a key element of BLM's multi-state Great Basin Restoration Initiative in eastern Nevada. The purpose of the Eastern Nevada Landscape Restoration Project is to implement actions to maintain and restore the health of the land. Doing so will maintain or improve wildlife habitat, watershed stability, riparian areas, species diversity and composition, and cultural values. The Eastern Nevada Landscape Restoration Project implements the objectives of the Great Basin Restoration Initiative, which include: maintaining healthy, functioning ecological systems; restoring degraded landscapes; developing a common basis for problem identification and solution; developing criteria for prioritizing restoration work and funding; combining funding and resources on identified priority areas; capitalizing on external partnerships; and promoting applied scientific research and studies. The Eastern Nevada Landscape Restoration Project has developed the following guiding principles for restoration projects, which the Ely Field Office has considered in developing alternatives to be analyzed in this RMP/EIS, particularly the agency preferred alternative.

- Develop strategies and implement actions to restore the landscape to an ecologically functioning condition.
- Initiate a comprehensive landscape/watershed restoration initiative using the adaptive management model and best available science.
- Involve local communities and tribes in decisions about restoration activities.
- Address all vegetative communities within the landscape with respect to age, structure, species diversity, and composition.
- Use fire as a restoration treatment, either alone or following a thinning.
- Control noxious weeds and invasive plants within the landscape.
- Develop local watershed assessments based on ecological site potential.

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1.3.3.2 Healthy Forests Restoration Act of 2003

On December 3, 2003, President George W. Bush signed the Healthy Forests Restoration Act of 2003. This legislation provides new tools and additional authorities to the BLM and U.S. Forest Service to restore more acres of forestland and associated rangeland more quickly. Specifically, the act provides for:

- Emphasis on fire reduction through fuels reduction projects. Of the 20 million acres that would be treated across the U.S., at least 50 percent of the projects must address wildfire concerns in the wildland urban interface, defined as communities where infrastructures and watersheds directly abut wildland fuels.
- Streamlining the National Environmental Policy Act of 1969 (NEPA) review. The EIS or environmental assessment for a project need contain only the Proposed Action, a No Action Alternative, and an alternative identified during scoping. For a wildland urban interface project, the environmental documentation would only need to address one alternative.
- A more effective appeals process. Public participation is encouraged early in developing high priority forest health projects. To be eligible to seek review of a decision, an appellant must file specific written comments during the environmental review process. An administrative review system for appeals would be established for U.S. Forest Service decisions.
- Expedited court review. Requested injunctions on projects would be limited to 60 days, with the possibility for renewal. Courts being asked to halt projects are instructed to balance the short-term effects of implementing the projects against the harm from undue delay and the long-term benefits of a restored forest.
- Project funding. The act authorizes appropriations of \$760 million per year to pay for forest restoration and fire reduction projects.

Passage of this act gives greater emphasis to accomplishing the goals of the Great Basin Restoration Initiative and the Eastern Nevada Landscape Restoration Project (see Section 1.3.3.1, Great Basin Restoration Initiative/Eastern Nevada Landscape Restoration Project).

1.3.3.3 Lincoln County Conservation, Recreation, and Development Act of 2004

On November 30, 2004, the Lincoln County Conservation, Recreation, and Development Act of 2004 was signed into law. This legislation implements a comprehensive plan that balances the needs for infrastructure development, recreation opportunities, and conservation of natural resources and public lands in Lincoln County, Nevada. Specifically, the act provides for:

- Disposal of federal lands by public sale. Of the 6.7 million acres of federally owned land in Lincoln County, up to 90,000 acres of federal land in areas adjacent to existing private property will be available for disposal by public auction. The proceeds from the annual auction will be divided amongst:

- The State of Nevada Education Fund (5%),
- Lincoln County economic development including fire protection, law enforcement, public safety, housing, social services, and transportation (10%), and
- Special Account available for use by the Secretary of the Interior (85%) for
 - reimbursement of BLM expenses associated with land sales,
 - inventory, evaluation, protection, and management of archeological resources,
 - development of a multi-species habitat conservation plan for Lincoln County,
 - processing of public land use authorizations and rights-of-way,
 - management of the Silver State Off-Highway Vehicle Trail, and
 - processing wilderness designations.
- Designation and release of areas being considered for wilderness status. The bill designates 14 areas as wilderness, totaling 768,294 acres, all of which are under the purview of the BLM Ely Field Office. The bill releases (removes from further consideration) 245,516 acres from wilderness study area status, including four BLM wilderness study areas that are released in their entirety and portions of other wilderness study areas throughout Lincoln County. This legislation resolves all but two of the wilderness study areas in Lincoln County.
- Establishment of multi-purpose utility corridors. The bill grants non-exclusive rights-of-way for the Southern Nevada Water Authority and the Lincoln County Water District. In addition, contingent upon the successful compliance with the requirements of NEPA, this legislation designates rights-of-way for the roads, wells, pipelines, and other infrastructure needed for the construction and operation of a water conveyance system in Lincoln and Clark counties.
 - The bill explicitly notes that the establishment of corridors and rights-of-way, in and of themselves, has no bearing on water rights adjudications, which are solely under the jurisdiction of the Nevada State Water Engineer.
 - The bill authorizes the Secretary of the Interior, acting through the U.S. Geological Survey, the Desert Research Institute, and a designee of the State of Utah, to conduct a study of groundwater in White Pine County, Lincoln County, and adjacent areas of Utah.
 - The bill also authorizes the relocation of an existing utility corridor from the east to the west side of Highway 93 between the Highway 93 and Highway 168 junction and the Kane Springs Road and Highway 93 junction.
- Establishment of the Silver State Off-Highway Vehicle Trail. The Silver State Trail is a 260-mile combination of existing back-country roads that are currently open and being used by off-highway vehicle enthusiasts in central Lincoln County. The bill provides for the creation of a Silver State Trail

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Management Plan to minimize impacts on natural resources and to protect cultural and archeological resources. The bill also provides for the temporary closure of the trail in the event that there are unintended adverse impacts on resources associated with the trail.

- Conveyance of State and County Parks. The bill includes a title dedicated to the creation of parks for Lincoln County and the State of Nevada. In the case of Lincoln County, the bill provides for the conveyance of approximately 15,000 acres for use as open space and public parks. In the case of Nevada State Parks, the bill provides for the conveyance of three parcels of land, totaling 4,785 acres, which are currently leased to the State of Nevada by the BLM. The conveyance to the State is contingent upon a written agreement between the state and county supporting the transfer of ownership. In both cases, if the land is not used for a public park or open space, the land will revert to federal ownership.
- Jurisdiction Transfer to the Bureau of Land Management. The bill enacts a transfer of the administrative jurisdiction for 8,382 acres associated with the utility corridor from the U.S. Fish and Wildlife Service to the BLM. The bill further transfers jurisdiction for 8,503 acres of land from the BLM to the U.S. Fish and Wildlife Service at the northeast boundary of the Desert National Wildlife Range.

1.3.3.4 Sage Grouse Management

Management of sage grouse and its habitat within the District would consider a number of management plans and guidance documents that have been developed for this species. Sage grouse management documents that have been developed to conserve and protect sage grouse within Nevada include the Nevada Sage Grouse Conservation Strategy (Conservation Planning Team 2001), the White Pine and Lincoln County Sage Grouse Conservation Plans, and the Greater Sage-grouse Conservation Plan for Nevada and Eastern California (Conservation Planning Team 2004). Other guidance documents that would be considered in the management of sage grouse within the District include Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats (Connelly et al. 2004), Guidelines to manage sage grouse populations and their habitats (Connelly et al. 2000), Western Association of Fish and Wildlife Agencies Recommended Sage Grouse Populations and their Habitats (2000), and Management guidelines for sage grouse and sagebrush ecological systems in Nevada (BLM 2000a).

1.3.3.5 Resource Advisory Councils

The Department of the Interior established the Resource Advisory Councils in 1995 as a forum for local citizens to provide advice and recommendations to the Department of the Interior on management of the public lands. Each Resource Advisory Council is comprised of local residents who represent a variety of backgrounds but who share an interest in the public lands. Each Council must include representatives of three broad categories:

- Commercial/commodity interests;
- Environmental/historical groups (including wild horse and burro and dispersed recreation); and
- State and local government, American Indian tribes, and the public at large.

Each Resource Advisory Council has a charter that outlines council membership and operating procedures. Resource Advisory Council members assist in the development of recommendations on public land and resource management. These recommendations address a variety of public land issues and might include, for example, fire management, off-highway vehicle use, land use planning, oil and gas exploration, grazing issues, and pending legislation. Council members develop recommendations related to public land management and provide them to the designated federal official who serves as liaison to the Resource Advisory Council. The designated federal official is usually a BLM line manager, such as the State Director or Field Manager. The Resource Advisory Councils have demonstrated that consensus-driven recommendations often lead to sustainable outcomes that benefit natural resources and often enjoy a high level of public support.

The Ely Field Office receives input from two of the three Resource Advisory Councils in Nevada. The Northeastern Great Basin Resource Advisory Council helps advise the Ely Field Office on public lands issues in White Pine County, while the Mojave/Southern Great Basin Resource Advisory Council provides input for Lincoln and Nye counties. The Secretary of the Interior has approved standards and guidelines for rangeland health, off-highway vehicle use, and wild horses that were developed with the involvement of these two Resource Advisory Councils. The standards and guidelines are written to accomplish four fundamentals of rangeland health. The fundamentals are that:

- Watersheds are functioning properly;
- Ecological processes are functioning properly;
- Water quality complies with state water quality requirements; and
- Habitats of protected species are functioning properly.

The terms and conditions of grazing permits and leases must conform to these standards. Thus, these Resource Advisory Council standards and guidelines constitute existing policy that will be incorporated into the revised Ely RMP without modification. The Resource Advisory Council standards and guidelines that apply to the Ely District, covering grazing, wild horses and burros, and off-highway vehicles are presented in their entirety in Appendix A.

1.3.3.6 Ongoing Programmatic EISs

The BLM is currently preparing two national programmatic EISs that are described below. These EISs will provide programmatic NEPA analysis for vegetation treatment and wind energy development on BLM-administered lands across the country. It will then be possible for a Field Office implementing or approving a site-specific project to tier their NEPA document to the analysis and decisions contained in the programmatic EISs and Records of Decision. While the schedules for the programmatic EISs are currently running in parallel with the Ely District RMP/EIS, the final RMP will be consistent with the conclusions that are ultimately reached in the programmatic documents.

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BLM Vegetation Treatment EIS

The BLM is preparing a national-level programmatic EIS to update analyses contained in four existing vegetation management EISs completed by the agency from 1986 to 1992 for 13 western states. The new programmatic EIS will expand the analysis to consider the effects of vegetation treatments, particularly those requiring the use of herbicides, in four additional western states and Alaska with surface administration by BLM. The impetus for the EIS derives from anticipated increased activity within the agency to address hazardous fuels reduction, invasive species and noxious weed control, and restoration of wildlife habitat. The EIS will evaluate the potential risks to humans, fish, and wildlife, including sensitive species, from the use of herbicides, including new herbicides not evaluated in the previous EISs. The EIS will provide a comprehensive impact assessment of vegetation treatments, human and ecological risk assessments, and recommended best management practices that BLM staff at the field level can use for local project planning. The Draft EIS is currently in preparation. Information can be viewed at <http://www.blm.gov/weeds/VegEIS/index.htm>.

BLM Wind Energy Development Programmatic EIS

The BLM is preparing a national programmatic EIS to evaluate wind energy development on BLM-administered lands in the western U.S. (excluding Alaska) and to establish a national wind energy program and policy. This evaluation is being conducted in response to recommendations contained in the President's National Energy Policy that encourages the development of renewable energy resources. The resulting national wind energy program and additional related policy will replace BLM's current interim wind energy development policy outlined in Instruction Memorandum No. 2003-020. The primary issues that will be addressed in the EIS include wildlife (including avian) and wildlife habitat impacts; the proximity of future energy development to military activities, wilderness areas, and other special management areas; and visual effects. Appendix B of this Draft RMP/EIS includes Best Management Practices from the draft programmatic EIS that will be used nationwide. The Draft Wind Energy EIS was released in September 2004 and can be accessed through the Wind Energy EIS Information Center at <http://windeis.anl.gov>. It is scheduled to be finalized between the Draft and the Final RMP/EIS. The final version of the RMP/EIS will incorporate information from the Final Wind Energy EIS.

1.4 BLM Planning Process**1.4.1 Land Use Planning Steps**

Land use plans are prepared utilizing the guidance contained in the BLM Land Use Planning Handbook (H 1601-1). The BLM uses a multi-step process when developing an RMP. Some of the steps may occur concurrently. Some situations may require the manager to supplement information used in the preparation of the RMP as additional information becomes available. The following steps have been fully integrated with the requirement for the preparation of an EIS on the RMP and the Council on Environmental Quality guidelines. The steps are:

Identify Issues*: Identify issues or land use problems that need to be resolved. This is an ongoing process that ties to the NEPA scoping process.

Develop Planning Criteria*: Planning criteria establish constraints and guides for the planning process; streamline the process; establish standards, rules, and measures; set the scope of inventory and data collection; identify the range of alternatives; and estimate the extent of analysis. Preliminary planning criteria developed by BLM can be modified through public comment.

Issue Notice of Intent/Scoping*: Publish the Notice of Intent in the Federal Register, local media, mailings, etc. The Notice of Intent identifies the preliminary issues and planning criteria and provides for a 30-day public review and comment period. This also is the start of the formal NEPA scoping process inviting the public to identify issues or land use problems that need to be resolved. In addition to the Federal Register notice, solicit ideas through mailings, newspaper articles, public meetings, and workshops. Gather, screen, and evaluate ideas from public, private, and internal sources. Summarize the issues to guide the planning process.

Collect Inventory Data*: Collect inventory data based on the planning criteria. Data generally are collected from existing sources. New data collection is limited to what is needed to resolve the planning issues identified.

Analyze the Management Situation*: Gather information on the current management situation, describe pertinent physical and biological characteristics, and evaluate the capability and condition of the resources. This analysis provides a reference for developing and evaluating alternatives.

Formulate Alternatives*: Identify a range of reasonable combinations of resource uses and management practices. Develop reasonable alternatives that address issues identified during scoping and that offer a distinct choice among potential management strategies. Include a no action alternative.

Estimate Effects of Alternatives: Estimate the impacts of each alternative on the environment and management situation.

*These steps may be revisited throughout the planning process and may overlap other steps.

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Select the Preferred Alternative: The Field Manager recommends to the State Director a preferred alternative that best resolves planning issues and promotes balanced multiple use objectives. The State Director approves the selection of the preferred alternative along with the other alternatives under consideration.

Issue Draft RMP/EIS: Publish the Notice of Availability in the Federal Register, media, mailings, etc. The Notice of Availability notifies the public of the availability of the Draft RMP/EIS and provides for a 90-day public review and comment period.

Issue Proposed RMP/EIS: Evaluate comments and make any modifications needed. Publish a second Notice of Availability and file a copy of the RMP/EIS Proposed Decision with the U.S. Environmental Protection Agency. This initiates the 30-day protest period under 43 Code of Federal Regulations 1610.5-2.

Governor's Consistency Review: Simultaneously initiate a 60-day Governor's review to identify inconsistencies with state or local plans.

Protests: See the procedure outlined in the Final EIS. The State Director may sign and implement that portion of the plan not under protest.

Notice of Significant Change: When a protest period or consistency review results in significant changes to the proposed plan, issue a Notice of Significant Change providing an additional 30-day comment period.

Plan Approval: Once protests have been resolved and the Governor's consistency review has been completed, the State Director approves the RMP by signing the Record of Decision.

Monitor and Evaluate the RMP: Ensure that the plan is continually monitored and evaluated until it is replaced.

1.4.2 Land Use Planning Decision Levels

The BLM planning process has been organized into different decision levels that progress from the very general to the very specific. Such an organization is called a step-down outline, which is presented below. Decisions at each step build on the previous steps so that in the end, specific management direction is consistent with the overall BLM mission. Not all steps are the subject of this RMP/EIS for the Ely District. The higher-level steps for national, state, and District-wide decisions previously have been established. Annotations in the following outline identify where in the document each step in the outline is presented.

Mission – BLM's Mission Statement – Why are we here? (*Inside front cover of the RMP/EIS*)

Nevada BLM/Ely Field Office Vision – Why are we here in Ely and Caliente? What public lands and uses will look like. Purpose. (*Section 1.3.2, Nevada BLM and Ely Field Office Visions, of the RMP/EIS*)

Issues – Scoping Issues and Planning Questions – Challenges or opportunities. (*Section 1.6, BLM Scoping Issues, of the RMP/EIS*)

Emphasis for each of the Alternatives – What each alternative is meant to accomplish. (*Section 2.2, Overview of Alternatives, of the RMP/EIS*)

Goals for each Resource/Use – What each resource/use is meant to accomplish. (*Table 2.4-1 of the RMP/EIS*)

Objectives – What we want to do to meet the goals for each resource/use. (*Table 2.4-1 of the RMP/EIS, as well as developed as part of the watershed restoration plans.*)

Management Direction (Actions) – Actions that would be taken to meet the goals for each resource/use. (*Table 2.4-1 and Sections 2.3, 2.4, and 2.5 of the RMP/EIS*)

1.4.3 Types of Decisions

The BLM administers programs to manage public resources at the national, state, and local levels. BLM management of public lands is based on a network of decisions made at each of the administrative levels. There are two general types of decisions: programmatic and site-specific. Both are subject to the requirements of the NEPA.

Programmatic decisions can be made at any administrative level without regard to land area, size, or location and generally are made at the national or regional level. Programmatic management decisions provide general guidance for future site-specific management activities within a defined framework.

Site-specific decisions can be made at any administrative level but are predominantly made at the local level. They are characterized by having project or activity level detail, a narrow focus, and actions specific to a unique location during a specified time period.

1.4.3.1 Programmatic-level Decisions

The Ely District is a large land area administered by offices in Ely and Caliente, Nevada. This RMP is being developed to combine management of the former Egan, Schell, and Caliente Resource Areas and will provide general management guidance in the form of goals, objectives, standards, and guidelines. The revised Ely RMP must conform to all national laws, agency policies, and BLM-wide or statewide plans that are currently approved. It is the intent of the BLM that the RMP will describe how the Ely Field Office will implement the Great Basin Restoration Initiative and other resource uses from a programmatic perspective.

In the past, project proposals would have been developed and implemented based upon boundaries of livestock grazing allotments. The Ely RMP/EIS will implement a policy change that directs BLM to plan and

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implement decisions based on watershed boundaries. In the future, watershed analyses will be performed to determine if rangeland health standards are being met within a watershed. If rangeland health standards are being met, the restoration plan (a portion of the watershed analysis) will propose projects and resource uses designed to maintain the healthy condition of the watershed. If standards are not being met, the restoration plan will propose projects and resource uses designed to improve the condition of the watershed.

1.4.3.2 Tiering

Tiering is used to address more specific actions or plans without duplicating relevant parts of previously prepared broader guiding documents. For example, if an action has been analyzed at the national or regional level and the locally proposed action is planned within the framework of the broader plan, tiering can be used as a means of streamlining the NEPA process and approval of the action.

The Council on Environmental Quality established the concept of tiering in 1978 as part of its regulations implementing NEPA. "Tiering refers to the coverage of general matters in broader environmental impact statements (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basin-wide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared" (40 Code of Federal Regulations 1508.28). It is BLM's intent that the Ely District RMP/EIS serve as a broad District-wide analysis to which more narrowly focused management actions can be "tiered" for their compliance with NEPA. For example, management of various resources at the watershed level (as discussed in Section 1.7.2) is analyzed in this RMP/EIS at the District (programmatic) level. Management direction for individual watersheds as contained in watershed analyses and restoration plans will be tiered to the RMP/EIS for NEPA compliance.

The planning model used by the BLM is based on the concept of tiered decision-making in which decisions are made within an overall framework for consistency, while also providing a local process for applying guidance to each individual situation. The Council on Environmental Quality regulations for implementing NEPA under 40 Code of Federal Regulations 1502.20 and 1508.28 encourage federal agencies to tier to existing decisions in order to focus analysis on the substantial issues. This approach is adopted in the BLM NEPA Handbook 1790-1, Chapter III, Using Existing Analyses. Past Interior Board of Land Appeals decisions support the concept of tiering as described in at least four recent decisions (11/90 Oregon Natural Resources Council; 10/92 Southern Utah Wilderness Alliance; 4/94 Kendall Citizens; and 6/99 Colorado Environmental Coalition).

1.4.3.3 Site-specific Decisions

Site-specific actions that are analyzed in this RMP/EIS could be implemented when the Record of Decision is signed. Site-specific decisions that need a level of detail that is beyond that analyzed in the RMP/EIS would undergo their own NEPA review before they are implemented. These would be in conformance with the RMP and would be tiered to the NEPA analysis contained in the RMP/EIS.

Program-specific "activity plans," such as Habitat Management Plans for wildlife, have been written over the years to address on-the-ground implementation of the approved land use plans. These activity plans also met the BLM's NEPA obligation with a site-specific analysis upon which to base a decision. Since in most cases the Ely RMP is not intended for project implementation, it will not analyze management direction to the level of detail contained within these more site-specific activity plans. Once the Ely District RMP is completed and approved, all of the activity plans that are in conformance with the revised RMP will continue to provide management direction for program-specific actions. Those activity plans that are not in conformance with the approved Ely RMP either will be updated to clearly reflect that they are implementing the direction in the approved land use plan, or they will be replaced, as needed, to provide appropriate management direction. Any new activity plans would be developed in accordance with the approved RMP.

1.5 Planning Criteria

Planning criteria are the constraints or ground rules that guide and direct the development of the RMP and determine how the planning team approaches the development of alternatives and ultimately the selection of a preferred alternative. They ensure that the RMP/EIS is tailored to the identified issues and ensure that unnecessary data collection and analyses are avoided. Planning criteria are based upon standards prescribed by applicable laws and regulations, agency guidance, analysis of information pertinent to the planning area, professional judgment of the planning team, and the result of consultation and coordination with the public, other federal, state, and local agencies and government entities, and American Indian tribes.

1.5.1 General Criteria

1. Management direction will comply with the requirements of the Federal Land Policy and Management Act and other applicable laws, regulations, and policies. (Section 1.1 and Chapter 2.0)
2. The Planning Team will use a systematic interdisciplinary approach to integrate physical, biological, economic, and other sciences. (Section 1.7)
3. Present and potential uses of public lands will be identified. (Chapter 3.0)
4. The long-term impacts of resource allocation will be weighed against short-term benefits. (Section 4.32)
5. Natural, social, and institutional factors contributing to the existing situation will be considered in the planning for future resource management actions. (Chapters 2.0 and 3.0)
6. The RMP/EIS will contain a combination of programmatic and implementation level decisions. (Chapter 2.0)
7. The RMP/EIS will be structured so that the Ely Field Office can tier the NEPA compliance for plan implementation activities off of the analysis contained in the RMP/EIS. (Section 1.4.3, Chapter 2.0, and Chapter 4.0)
8. BLM will ensure that consideration is given to those Tribal, state, and local plans, standards, laws, and policies that are germane in the development of land use plans for public lands. A potential conflict with local or federal law does not necessarily render an alternative unreasonable; however, such conflicts must be considered (Council on Environmental Quality 1981). BLM land use plans will be consistent with other approved plans to the maximum extent consistent with federal law. (Section 1.9)
9. The RMP/EIS will be based upon the principles of adaptive management. (Section 1.7.1)
10. The final Ely District RMP would remain in effect as long as the management direction contained in the Plan is valid in light of scientific understanding and current management needs. (Section 1.1)

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11. Any lands located within the planning area, which are acquired by the BLM, will be managed for the purpose for which they were acquired, subject to any constraints associated with the acquisition. (Section 2.5.12)
12. The RMP/EIS will incorporate valid existing rights and management from currently approved BLM land use plans. (Sections 2.3.2 and 2.4)
13. Federal Geographic Data Committee standards and other applicable BLM data standards will be followed. (RMP/EIS maps)
14. The RMP/EIS will incorporate the established Resource Advisory Council standards and guidelines that are applicable to the Ely District. (Appendix A)
15. The RMP/EIS will rely, to the extent available, on an inventory of public lands, their resources, and other values. (Chapter 3.0)
16. Provide for compliance with applicable Tribal, federal, and state pollution control laws, standards, and implementation plans. (Section 1.9)
17. The RMP/EIS will establish the management guidance and direction for restoration and management of the planning area. (Chapter 2.0)
18. Soil surveys and ecological site descriptions developed by the Natural Resource Conservation Service will be considered and used, when applicable, to determine site potential. (Table 2.4-1 and Section 3.19)
19. Watershed analyses will be conducted interdisciplinarily following the Rangeland Health Standard Handbook, H-4180-1, and the Unified Federal Policy for Management by Watershed. (Section 1.7.2 and Appendices A and C)
20. A variety of specific and conceptual models will be used to develop and evaluate management direction. (Appendix D)

1.5.2 Cooperation and Consultation

1. The Planning Team will work cooperatively with the Northeastern Great Basin and the Mojave/Southern Great Basin Resource Advisory Councils and interested publics. (Sections 1.3.3.3 and 5.1.4, and Appendix A)
2. Alternatives for resolution of resource management issues will be developed jointly by the BLM, cooperating agencies, the RMP/EIS contractor, and interested publics. (Chapter 6.0)

3. BLM will consult with the Nevada Department of Wildlife during development of the RMP/EIS. (Section 5.1.5)
4. The U.S. Fish and Wildlife Service will be consulted early and throughout the planning process, under existing interagency streamlined consultation procedures, to ensure consistency between the plan and all requirements of the Endangered Species Act of 1973, as amended. (Section 5.3)
5. The planning process will involve consultation with American Indian tribal governments and will provide strategies for the protection of recognized traditional and cultural uses and consider impacts on Indian trust assets. (Sections 3.25, 4.25, and 5.1.4)
6. The State Historic Preservation Officer will be consulted throughout the planning process on any potential effect of this plan on cultural resources under provision of the National Historic Preservation Act of 1966, as amended under the National Programmatic Agreement and under the Nevada State Protocol. (Section 5.1.5)
7. Land disposal proposals will be developed in collaboration with other federal agencies, Tribal governments, and state and local governments. (Section 2.5.12)

1.5.3 Renewable Resource Management

1. The RMP/EIS will use and observe the principles of multiple use and sustained yield that recognize the demands for food, woodland and native plant products, fiber, recreation, wildlife habitat, watershed protection, and numerous other values from the public lands. (Section 1.3.1)
2. Priority will be afforded to designating and protecting Areas of Critical Environmental Concern (ACEC). (Table 2.4-1, Section 2.5.22, Appendix Q)
3. Management direction for federally listed threatened or endangered species will follow U.S. Fish and Wildlife Service recovery plans. (Section 3.7)
4. The priority for the application of management actions for special status plant and wildlife species will be: 1) federal endangered species, 2) federal threatened species, 3) federal proposed species, 4) federal candidate species, and 5) BLM sensitive species.
5. The U.S. Fish and Wildlife Service will revise critical habitat designations in the Desert Tortoise Planning Area to be consistent with the boundaries of the three ACECs that have been designated in the Desert Tortoise Plan Amendment (BLM 2000b) for the tortoise. (Section 1.9.3.1)
6. The plan will recognize the State's responsibility to manage wildlife. (Section 3.6)
7. There are no designated wild horse ranges or free-roaming burros on the District. (Section 3.8.3)

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8. Ecological site inventory or other approved monitoring methods will be used to establish and document current vegetation conditions. (**Table 2.4-1**, Section 3.19)
9. Fire management strategies will be consistent with the 2001 Federal Wildland Fire Policy, the National Fire Plan, and other applicable policies or their revisions or replacements. (Section 2.3.2)
10. The RMP/EIS will acknowledge the Nevada State Engineer's responsibility to adjudicate water rights, while complying with Nevada State laws and regulations for acquiring and maintaining water rights and permits. (Section 3.3.3)
11. Soils, climate, and weather data will be the basis for determining the possible range of healthy plant communities, appropriate restoration actions, and species to be used in restoration. (**Table 2.4-1**)

1.5.4 Nonrenewable Resource Management

1. The mineral development scenario will be based on mineral potential within the planning area, recognition of the nation's need for domestic sources of minerals from public lands, projected demand from the mineral industries, and the National Energy Plan. The planning process will address areas closed to mining, constraints to surface use, and post mining land use. (Sections 2.5.18, 3.18, and 4.18)
2. Reasonably foreseeable development scenarios will be developed according to the Fluid Minerals Handbook H-1624-1. (Section 4.18.1)
3. The RMP/EIS will address transportation, route management, and access, and identify which areas should be designated as open, limited, or closed to accommodate resource users, recreationists, protection of resource values, and administrative needs. The plan also will address where additional access is needed for administrative and recreational uses of BLM-administered lands. (Section 2.5.14)
4. Lands identified for disposal prior to July 25, 2000, shall be identified for disposal subject to the Federal Land Transaction Facilitation Act ("Baca Bill"). (Section 3.12)
5. Criteria for designating disposal lands will be to identify lands that will serve important public objectives, including but not limited to community expansion or economic development, which could not be achieved prudently or feasibly on land other than public land and which outweigh other public objectives and values. (Section 2.5.12)
6. Acquire through purchase, exchange, donation, or other means, lands, easements, or interests in lands that have high resource values and/or lands that improve the management and administration of public lands. (Section 2.5.12)

1.5.5 Social and Economic Considerations

1. The current and projected lifestyles of area residents and valid existing rights will be recognized in the RMP/EIS. (Section 3.24)
2. The analysis of social and economic issues and data will be consistent with Instruction Memorandum 20-02-167, "Social and Economic Analysis for Land Use Planning." (Sections 4.23 and 4.24)

1.6 Scoping Issues

The formal 60-day public scoping period for the Ely District RMP/EIS was held during February, March, and April 2003. Scoping is discussed in more detail in Section 5.1.1, RMP/EIS Scoping Process, of this EIS. The Informational Scoping Document (prepared in February 2003) that was distributed at the scoping meetings contains planning questions that were provided to interested parties for their review in assisting BLM in identifying issues and concerns to be considered in the EIS process. A Scoping Report containing a complete list of scoping comments was prepared and can be viewed, along with the Scoping Document, on the Ely RMP/EIS web page (<http://elyrmp.ensr.com>). For a complete database of all comments by topic, see Appendix B in the Scoping Report. Comments received during the 60-day scoping period were reviewed and consolidated for use during alternative development and impact analysis. In addition, BLM has had ongoing contact with cooperating agencies and other interested parties during which issues relevant to the RMP/EIS were discussed. The following planning issues incorporate input from the public scoping, agency consultation, interested party meetings, and BLM team review. In the following sections, issues have been arranged by those that are addressed in this RMP/EIS and those that were considered and judged to be beyond the scope of the RMP/EIS. At the end of each issue, the locations in the RMP/EIS where the issue is discussed are cross-referenced.

1.6.1 Issues Addressed**Issue No. 1: Restoring Ecological Health**

Vegetation and soils in upland, riparian, and wetland areas provides the foundation for many resource uses on public land. Structurally diverse and healthy plant communities provide habitat for wildlife and forage for domestic animals. Healthy plant communities in the proper ecological sites provide for soil stabilization and increased infiltration of precipitation, prevent erosion, minimize noxious weed expansion, enhance the visual quality of the public lands, and aid in maintaining or improving water quality. Resource uses can affect the natural function and condition of vegetation communities. These uses include livestock grazing, recreation, forest and woodland management, fire management, mineral exploration and mining, and off-highway vehicle use.

The vegetation on the Ely District is changing. Pinyon and juniper trees are dominating ecological sites previously occupied by a mixture, or mosaic, of herbaceous and woody species. Many sagebrush-dominated sites have lost or nearly lost their perennial herbaceous understory, and invasive, exotic species are increasing and in some instances replacing native vegetation. In some locations, the vegetation community is close to transitioning into an entirely different vegetation community with no chance of reverting (it crosses a threshold). In other locations, these thresholds have been crossed. Once a threshold is crossed, the re-establishment of the former vegetation state has both a very great cost and a high risk of failure. The change in vegetation state has the effects of reducing sustainability of the land for wildlife, wild horses and livestock; increasing the potential of catastrophic fire; providing advantageous conditions for invasive, exotic plants; and increasing the likelihood of soil erosion (Perryman et al. 2003). Diverse landscapes, with a mix of different native plant community types and phases within those types, are often healthier and more resilient to the same disturbances that can result in negative conditions in less diverse

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systems. Landscape health is manifested in the ability of native (or introduced transitional) vegetation in a desired (natural) state, to be resilient (to recover from disturbance) or resistant (to not change) when disturbed. (See **Table 2.4-1** and Sections 3.19 and 4.19.)

Issue No. 2: Air

Relative to other areas of the country, the current condition of air quality in the Ely District is good. However, wildfires may have a substantial effect on the air resource. Due to increased fuel availability, current wildfires produce higher levels of smoke emissions than were produced historically. (See **Table 2.4-1** and Sections 3.2 and 4.2.)

Issue No. 3: Soil and Water

Soil loss is a concern on the District. The primary concerns relate to locations where the reduction or loss of herbaceous vegetation and/or biological soil crusts has occurred. Elimination of understory vegetation on the hill slopes and valley floors also is a contributing factor to soil loss. (See **Table 2.4-1** and Sections 3.4 and 4.4.)

Groundwater and the limited surface water resources on the District currently provide for municipal, industrial, agricultural, wildlife, and domestic livestock uses. Although agricultural uses have been declining, the demand for groundwater to support municipal and industrial uses has been increasing. Vegetation decline and associated soil erosion can lead to increases in total suspended sediments in streams. (See **Table 2.4-1** and Sections 3.3 and 4.3.)

Issue No. 4: Cultural and Paleontological Resources

Cultural resources identified to date in the District cover a timespan of over 10,000 years. These resources provide for scientific study and visitor enjoyment. The protection of and consideration of impacts to cultural resources is governed by numerous federal and state mandates, which include, but are not limited to, Section 106 of the National Historic Preservation Act of 1966, as amended, the Archeological and Historic Preservation Act of 1974, the Federal Land Policy and Management Act of 1976, and the Nevada State Protocol Agreement. Despite numerous laws, vandalism, theft, visitor impacts, and natural deterioration are diminishing the cultural and scientific values of cultural resources in Nevada (including within the District). (See **Table 2.4-1** and Sections 2.5.9, 3.9, and 4.9.)

Paleontological resources are recognized as a fragile and nonrenewable scientific record of the history of life on earth. These resources are of value to scientists, educators, hobbyists, commercial collectors, and other members of the public. Without protection, the resources may be intentionally or unintentionally damaged or destroyed, causing valuable information to be lost. (See **Table 2.4-1** and Sections 2.10, 3.10, and 4.10.)

Issue No. 5: Visual Resource Management

The BLM is responsible for ensuring that the scenic value of public lands in the Ely District is managed in accordance with the objectives of the Visual Resource Management classes. These Visual Resource Management Classes are being assigned to the lands in the District through the RMP inventory process that evaluated the visual appeal of a tract of land, the scenic sensitivity in the planning area, and the tract's visibility from travel routes or observation points. (See **Table 2.4-1** and Sections 2.5.11, 3.11, and 4.11.)

Issue No. 6: Special Status Species

Over 150 special status and sensitive species of plants and animals occur in the planning area. All contribute to the biological diversity of the area. These species may be affected by multiple uses that could result in increased habitat degradation and fragmentation, a reduction in health and resiliency of ecological systems, and a reduction in overall biological diversity, and increased competition for resources on public lands. (See **Table 2.4-1**, Sections 3.7 and 4.7, and Appendix F.)

Issue No. 7: Fish and Wildlife

The fish and wildlife species in the planning area (both game and non-game) provide recreation opportunities and contribute to biological diversity. These species may be affected by the multiple uses and management actions that could result in increased habitat degradation and fragmentation, a reduction in health and resiliency of ecological systems, and a reduction in overall biological diversity, and increased competition for resources on public lands. (See **Table 2.4-1** and Sections 3.6 and 4.6.)

Issue No. 8: Wild Horses

Since 1971, the BLM has been managing free-roaming horses and burros on public lands in accordance with the Wild Free-roaming Horse and Burro Act (Public Law 92-195). The District currently manages 24 herd management areas; there are no designated wild horse ranges or free-roaming burros on the District. (See **Table 2.4-1** and Sections 2.5.8, 3.8, and 4.8.)

Issue No. 9: Fire Management

Fire is an integral part of the evolutionary history of the vegetation communities on the District. Planned and unplanned fires on the District currently are managed in accordance with the Ely District Fire Management Plan. (See **Table 2.4-1** and Sections 2.5.20, 3.20, and 4.20.)

Issue No. 10: Livestock Grazing

Grazing within the District is conducted in accordance with existing grazing- and rangeland-specific laws (Taylor Grazing Act of 1934 and Public Rangelands Improvement Act of 1978) and the mandates of the Federal Land Policy and Management Act of 1976 that stipulates management of public lands under the principles of sustainability and multiple use. Within the public lands administered by the BLM Ely Field

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Office, there currently are 235 active grazing allotments. Each of the allotments has been assigned to, and is administered in accordance with, one of three selective management categories according to the management intensity and funding required, potentials for recovery, and resource conflicts involved. (See **Table 2.4-1** and Sections 2.5.16, 3.16, and 4.16.)

Issue No. 11: Recreation

Outdoor recreation use in the planning area has been increasing. There is demand for both developed and undeveloped recreation opportunities. Recreational activity in the planning area typically includes fishing, hunting, hiking, camping, off-highway vehicle use, horseback riding, and cultural tourism. Other less traditional sports (e.g., rock climbing, mountain biking, geocaching, and caving) also are increasing on the District. (See **Table 2.4-1** and Sections 2.5.15, 3.15, and 4.15.)

Issue No. 12: Lands and Realty

Approximately 82 percent (or 11.4 million acres) of the land within the District boundary is public land administered by the BLM. The disposal of BLM-administered lands may provide for community expansion, state recreational facilities, or Tribal needs. (See **Table 2.4-1** and Sections 2.5.12, 3.12, and 4.12.)

Issue No. 13: Minerals (Includes Oil and Gas and Geothermal)

The planning area contains a wide variety of energy and mineral resources, including Locatable Minerals (e.g., gold, silver, copper), Salable Minerals (e.g., sand, gravel, topsoil, clay and common varieties of limestone and other minerals), and Leasable Minerals (e.g., oil and gas and geothermal resources). Based on the geologic characteristics of the District, there is potential for future oil and natural gas production; however, no commercially producible reserves have been identified on the District to date. There is very low or no potential for coalbed natural gas resources on the District. (See **Table 2.4-1** and Sections 2.5.18, 3.18, and 4.18.)

Issue No. 14: Special Designations

Special designation areas within the planning area are managed for unique or significant features or values. The special designation areas on the District include: Areas of Critical Environmental Concern; backcountry byways; geologic, rockhounding, scenic, natural, research natural, and historic areas; archaeological sites and districts; national historic trails; and wilderness and Wilderness Study Areas. (See **Table 2.4-1** and Sections 2.5.22, 3.22, and 4.22.)

Issue No. 15: Economic and Social Conditions

The Ely District includes land in three of Nevada's counties (Lincoln, Nye, and White Pine). Included in this area are three American Indian reservations (Duckwater Shoshone Tribe, Ely Shoshone Tribe, and Confederated Tribes of the Goshute Reservation) in part or in total. With BLM-administered land comprising approximately 82 percent of the land within the District boundary, socioeconomic effects resulting from the

interactions between people, their activities and associated public land use, and the management of public lands need to be evaluated in the planning process. (See **Table 2.4-1** and Sections 3.23, 3.24, 4.23, and 4.24.)

1.6.2 Issues Considered but Not Further Analyzed

All in-scope issues are addressed in the alternatives. A number of issues were raised during the scoping process that were judged by BLM to be outside or beyond the scope of the RMP/EIS. These issues and the reasons for not analyzing them in detail are summarized in the Scoping Report that can be found at <http://ElyRMP.ensr.com>. However, there were three topical areas that were of great enough interest to commenters that the rationale for not analyzing the issues in detail is presented here.

1.6.2.1 Wilderness Designation/Certain Special Designations

Numerous comments provided specific proposals for the creation of wilderness or the release of current Wilderness Study Areas. The Lincoln County Conservation, Recreation, and Development Act of 2004 designated additional wilderness and released certain Wilderness Study Areas in Lincoln County, Nevada (see Section 1.3.3.3). The BLM has no authority or control over the legislative wilderness designation. Consequently, the Bureau encourages comments regarding the designation of Wilderness and/or the release of Wilderness Study Areas in the remainder of the District be directed and communicated to Nevada's Congressional delegation. Until Wilderness Study Areas are designated or released from further wilderness consideration by Congress, they will continue to be managed under the Bureau's Interim Management Policy for Lands Under Wilderness Review (BLM Handbook, H-8550-1).

Other comments requested that BLM reconsider certain areas for designation as Wilderness Study Areas, as the previous inventory of the District was conducted over 20 years ago. BLM Instruction Memorandums No. 2003-273 and No. 2003-274, issued on September 29, 2003, direct all BLM Field Offices not to designate new Wilderness Study Areas through the land use planning process. Thus, suggestions for the designation of new Wilderness Study Areas are beyond the scope of the RMP/EIS. However, lands identified in these suggestions (i.e., public designated wilderness proposals) can be examined for wilderness characteristics as part of the planning process, and management direction to preserve wilderness characteristics can be considered in a new RMP/EIS. Management direction would be based on existing BLM management authority and policy such as designation of ACECs, visual resource management, and off-highway vehicle management. The Ely District RMP/EIS also will consider acquisition of private inholdings within designated wilderness and existing Wilderness Study Areas.

Additionally, several comments were received requesting that BLM establish new types of special management areas, allowing the BLM to manage exclusively for the benefit of grazing or economic development. Special designation categories were created by the Federal Land Policy and Management Act, other Congressional actions, or Bureau-wide administrative actions. The Ely Field Office does not have the authority to create additional designation categories for grazing or private economic development; however, these uses within the District have been considered in the RMP/EIS.

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1.6.2.2 Grazing Allotments and Animal Unit Months

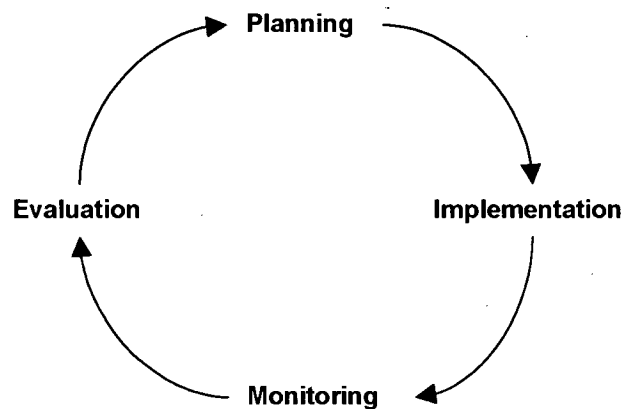
Many comments discussed the need to revoke grazing allotment permits and to modify grazing intensity (number of animal unit months and length of the season of use) so as to reduce the impacts of grazing on vegetation, wildlife, and wild horses. Changes to allotments, animal unit months, or length of use can be made outside of the RMP/EIS process on an as needed basis. Further, a review of the impacts of grazing on associated resources will be conducted at the site-specific level as part of the watershed analyses. Therefore, while the BLM will consider these comments during future watershed planning processes, they are beyond the scope of this programmatic RMP/EIS.

1.6.2.3 Revised Statute 2477

Several comments mentioned the issue of land access in regards to Revised Statute 2477. Revised Statute 2477, contained in the Mining Law of 1872, was intended to facilitate settlement of the West by granting rights-of-way on public lands to create an early transportation network. Although Revised Statute 2477 was repealed in 1976 when the Federal Land Policy and Management Act was passed, existing claims were grandfathered in, or still honored. Congress has placed a moratorium on BLM recognition, management, or recording of new Revised Statute 2477 claims unless an overriding need can be shown. Until this moratorium is lifted, Revised Statute 2477 issues are outside the scope of this RMP/EIS.

1.7 Resource Management Plan Implementation**1.7.1 Adaptive Management**

The Ely Field Office intends to implement the RMP, which will manage the resources in the District, using the principles of adaptive management. Adaptive management, as defined here, is a formal process for continually improving management policies and practices by learning from the outcomes of operational programs and new scientific information. Under adaptive management, plans and activities are treated as working hypotheses rather than final solutions to complex problems. This approach builds on common sense, experiments testing alternative management methods, and learning from experience, which is then used in the implementation of plans. The process generally includes four phases: planning, implementation, monitoring, and evaluation.



The information developed through the monitoring process will be used to assess management strategies, alter decisions (which may require a plan amendment or new NEPA analysis), change implementation, or maintain current management direction. The evaluation process may generate new information that needs to be incorporated into management actions. Ongoing sub-unit assessments and integrated activity planning also may uncover new information that can be used to make changes to projects, strategies, objectives, and monitoring elements. New information may result in any of the following:

- Concluding that the management actions are moving the landscape towards the broad-scale objectives of the RMP. In this case, management actions are affirmed and may not need to be adjusted.
- Concluding that further research needs to be initiated or that actions must be adjusted to more efficiently achieve broad-scale objectives of the RMP. If new information or research demonstrates better ways to achieve plan objectives, changes in subsequent activity planning and project implementation can be made. NEPA analysis may be required depending upon the nature of the management changes.

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- Concluding that broad-scale objectives need to be altered based on new information. If the new information indicates reconsideration of RMP objectives, a plan amendment could be considered to re-examine targeted future conditions and pathways to reach those conditions.

1.7.2 Management by Watershed

BLM policy calls for the use of watershed, rather than administrative, boundaries when conducting local analyses except when compelling issues dictate that an administrative or other ecological-based boundary take precedence. The Ely Field Office is currently conducting watershed analyses on a limited basis, and proposes to continue this process as part of the revised RMP. The RMP/EIS proposes the use of tools and techniques for watershed analysis that have already been approved for use throughout BLM (see Section 1.4.3, Types of Decisions). The Ely Field Office has established 61 watershed management units (based on draft 10-digit Hydrologic Unit Code level 5 watershed boundaries or portions thereof) to address site-specific objectives and management needs to implement the goals of the Great Basin Restoration Initiative and the RMP. The watershed determination documents and watershed restoration plans that would flow from the watershed analyses would provide site-specific restoration recommendations. These site-specific recommended actions would be subject to NEPA. Until the watershed analysis is completed for a particular watershed management unit, lands and resources would be managed following existing BLM regulations and policies, in conformance with the management direction for that area identified in the RMP. Completed watershed analyses will be reviewed periodically to determine if there have been any changes in resource issues, BLM policies and regulations, or other concerns that would warrant a change in the restoration plan (see Section 1.7.1, Adaptive Management).

After the 1999 and 2000 fire seasons, the Ely Field Office recognized the urgent need to restore ecological health and function to many landscapes under Ely Field Office jurisdiction, as well as the importance of working collaboratively with other federal and state agencies, local government, public land stakeholders, and the general public. Previous vegetation treatment projects within the District were randomly located and were not based on systematically identified needs to restore or maintain watershed health and function. Thus, their effectiveness was limited. The Ely Field Office is now focusing restoration efforts on getting the most work done through a watershed-based approach. The RMP is intended to facilitate management and restoration on a landscape scale.

Watershed analysis teams will assess and evaluate watersheds based on indicators outlined in the Resource Advisory Council Standards and Guidelines for the Northeastern Great Basin and Mojave/Southern Great Basin Areas (see Appendix A). The Ely Field Office is using BLM guidance 43 Code of Federal Regulations §4180.1, BLM Handbook H-4180-1, and Manual 4180 – *Rangeland Health Standards* to guide this watershed analysis process, which includes the on-the-ground implementation of existing programs that are in compliance with current laws, regulations, and policy. Public involvement also will help to achieve a greater understanding of land health issues.

The watershed analyses will help to implement the Ely District RMP by:

1. Identifying dominant plant community reference (preferred) conditions;
2. Identifying existing plant communities and their general conditions;
3. Developing restoration goals (e.g., restoring plant communities that do not meet the Resource Advisory Councils' land health standards or other criteria for healthy ecological communities);
4. Evaluating and determining causal factors for not meeting the Resource Advisory Councils land health standards; and
5. Providing a plan for restoring and maintaining watershed health and function.
6. Watershed analyses will document water quality management goals and specify appropriate water quality criteria to meet established goals where surface waters are present.

The watershed analyses will characterize the human, terrestrial vegetation and wildlife, aquatic vegetation and wildlife, and physical features and the associated conditions, processes, and interactions within each watershed. Watershed analysis enhances BLM's ability to estimate direct, indirect, and cumulative effects of management activities and allows for greater flexibility within the watershed. It guides the general type, location, and sequence of management activities. It establishes baseline watershed conditions that permit measurement of progress toward management objectives. It allows for a shift from species and individual use-driven management to the natural systems that support the watershed function. This approach allows BLM to focus on flexible management techniques necessary to maintain or improve the functionality of the watershed. Future landscape-scale actions would be able to be applied in such a manner as to affect or influence much more of the watershed and its functionality.

The watershed analysis consists of four phases: 1) assessment phase, 2) evaluation phase, 3) determination phase, and 4) implementation phase. Please refer to Appendix C for more detail on the activities that take place during each phase. The Ely District has 61 watershed management units requiring analysis. A general priority for analysis (high and low) has been developed and is presented in Section 4.4; however, the watersheds to be analyzed in any given year will be an administrative decision to be made at the beginning of each field season. It is anticipated that watershed priorities will change as the Ely Field Office responds to on-the-ground resource management objectives such as ecological health, water quality protection, sensitive species requirements, fuel reduction, and fire restoration. Community needs, funding levels, and availability of Natural Resource Conservation Service soils inventory data also will influence the order in which watersheds or portions of watersheds are analyzed.

1.7.3 Ecological Analysis at the Watershed Scale

The RMP provides the management goals and direction for ecological analysis at the watershed scale in terms of issues to be addressed and desired range of conditions to be achieved, through both the

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implementation of the RMP and resource management actions. The evaluation of the conditions achieved would be through appropriate monitoring.

1.7.4 Monitoring

The BLM planning regulations (43 Code of Federal Regulations 1610.4-9) call for the ongoing monitoring of resource management plans with a formal evaluation completed every 5 years. The Ely RMP will be continuously monitored to provide up-to-date evaluations and to respond to changing situations. Restoration actions arising through watershed analyses would be evaluated to ensure consistency with RMP objectives.

Monitoring will be coordinated with other appropriate agencies and organizations in order to enhance the efficiency and usefulness of the results across a variety of administrative units. The approach will build on past and present monitoring efforts. In addition, specific monitoring protocols, criteria, goals, and reporting formats will be developed to augment and revise the monitoring plan and facilitate the process of aggregating and analyzing information.

There are two levels of monitoring to be carried out in analyzing (evaluating) the results of the resource management plan. The first level of analysis is to evaluate the RMP itself. The second level is monitoring at the project level.

1.7.4.1 RMP Monitoring

The RMP monitoring level entails the detailed monitoring and evaluation plan that will be published with the Final RMP/Record of Decision. It will guide how the RMP will be formally evaluated at intervals not to exceed 5 years. All plan monitoring will assess:

1. Whether management actions are resulting in satisfactory progress toward objectives.
2. Whether actions are consistent with current policy.
3. Whether original assumptions were correctly applied and impacts correctly predicted.

RMP Management Focus

The restoration and maintenance of healthy ecological systems within watersheds is a primary focus for the future management of the Ely District. Healthy ecological systems are geographically diverse and change over time. They are compatible with soil potential and are resilient to disturbance.

Resources and resource uses will be managed to restore or maintain ecological health. Certain resource management changes and active treatments may need to be implemented, in portions of watersheds, to accomplish this objective. Adaptive management will be pursued to avoid deteriorating conditions favoring invasive plants and catastrophic fires. Any projects will be implemented so as to result in a mosaic of vegetation within a watershed.

In the long term, natural disturbance (such as drought or fire) will occur and fewer treatments will be needed to maintain ecological health. The result will be a variety of vegetation phases within a watershed, which will provide diverse, healthy conditions for future generations.

4. Whether mitigation measures are satisfactory.
5. Whether the RMP is consistent with the plans and policies of state and local government, other federal agencies, and Indian Tribes.
6. Whether new data are available that would require changes to the plan.

Resource management monitoring provides information on the relative success of management strategies. RMP implementation will be monitored to ensure that management actions: 1) follow prescribed management direction (implementation monitoring), 2) meet desired objectives (effectiveness monitoring), and 3) are based on accurate assumptions (validation monitoring).

The monitoring plan will not remain static. It will be periodically evaluated as to the relevance of monitoring questions and standards, and will be adjusted as appropriate. Some monitoring items may be discontinued while others may be added as knowledge and issues change with implementation.

When monitoring and evaluation indicate that modifying the resource management plan is necessary, the Ely Field Manager will determine what changes are necessary to ensure that management actions are consistent with RMP objectives. If the Field Manager finds that a plan amendment is necessary, an environmental impact statement or environmental assessment of the proposed change will occur and a recommendation on the amendment made to the State Director. If approved, it may be implemented 30 days after public notice. A plan amendment "shall be initiated by the need to consider monitoring and evaluation findings, new data, new or revised policy, a change in circumstances, or a proposed action that may result in a change in the scope of resource uses or a change in the terms, conditions, and decisions of the approved plan." (43 Code of Federal Regulations 1616.5-5)

1.7.4.2 Watershed Level Monitoring

The second level of analysis through monitoring is for projects at the watershed scale. Monitoring is integral to implementation of adaptive management and the ecological system approach for management. A monitoring plan would be developed as part of each watershed restoration plan to measure progress toward achieving the desired range of conditions, meeting the Land Health Standards, and addressing the issues raised in the watershed analysis. The monitoring plan would track the indicators used in the analysis and the causal factors for change. In some cases, existing monitoring programs may need to be redesigned to capture the data needed to complete future evaluations. New monitoring would be designed and located to detect both deteriorating and improving areas with regard to the Land Health Standards (see Section 1.3.3.5 and Appendix A). Data collection and evaluation would be scheduled to allow changes in management activities.

Managers will use monitoring information from watershed analysis and site specific projects to determine whether an objective has been met, and whether to continue or modify management direction. Monitoring results are to be reviewed in watershed evaluation reports for the various watersheds. This information will

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be available on the Ely Field Office's web site at www.nv.blm.gov/ely and in printed form from the Field Office.

The ecological system approach to analysis at the watershed scale will be used to assure potential actions are evaluated with an overall understanding of the changing ecological conditions and function of specific watersheds. Monitoring information gained through analysis at this scale will be used in the adaptive management process (see Section 1.7.1) to determine the condition of the system and clarify the steps needed to achieve rangeland health standards (see Appendix C) through management actions and projects. Appendix C contains a

summary description of the watershed analysis process described in H-4180-1 Rangeland Health Standards and an example of one watershed monitoring approach under consideration by the Ely Field Office.

Monitoring

Monitoring will involve the application of current and evolving scientific knowledge and data in an adaptive management context to ensure that treatments are beneficial. The plan will identify specific indicators (as identified in Resource Advisory Council standards [Appendix A] and methods [BLM Technical References]) intended to detect changes in ecological health. Follow-up monitoring on treatments will be done multiple times and up to 10 years following treatment to determine the long-term effects of treatments.

Information gathered from watershed analysis also will be used in developing monitoring strategies and objectives. The results and findings from watershed analyses using the most useful indicators of land health standards can be used to monitor environmental change, detect magnitude and duration of changes in conditions, formulate and test hypotheses about the causal factors of these changes, understand these causes and predict impacts, and manage the ecological systems for desired outcomes. Monitoring at the watershed scale also will provide information about patterns and processes within a watershed. The monitoring process will collect information in the most cost-effective manner, and may involve sampling or remote sensing. Unnecessary detail and unacceptable costs will be avoided by focusing on key indicators of Resource Advisory Council Standards, specific desired characteristics for plant communities, and proper sampling methods. For site-specific monitoring, the level and intensity of monitoring will vary, depending on the sensitivity of the resource or area and the scope of the proposed management activity.

1.7.4.3 Maintenance Actions

Potential minor changes, refinements, or clarifications in the resource management plan may take the form of maintenance actions (43 Code of Federal Regulations 1610.5-4). Maintenance actions incorporate minor data changes and are usually limited to minor refinements and documentation. Plan maintenance would not result in expansion of the scope of resource uses or restrictions or change the terms, conditions, and decisions of the approved RMP. Maintenance actions are not considered plan amendments (see Section 1.7.4.1) and do not require a formal public involvement and interagency coordination process.

1.8 Relationships that are Key to the Ely District RMP/EIS

A multitude of laws, regulations, and policies, as well as land use planning documents, direct how the Ely Field Office manages the resources within the Ely District. Further, there are cooperative relationships that have been established with other federal, state, local, and Tribal governments that manage lands and resources within the overall boundaries of the District. This entire body of relationships is too extensive to treat even in a summary manner in this document; however, certain relationships are key to understanding the management direction proposed in the Ely District RMP/EIS, and these are presented below.

1.8.1 Federal Agencies

Parts of the Humboldt-Toiyabe National Forest and the entire Great Basin National Park are within the boundaries of the Ely District. The BLM, U.S. Forest Service, and National Park Service strive to achieve similar resource management goals on adjoining land.

The U.S. Fish and Wildlife Service administers the Endangered Species Act of 1973 (as amended). The BLM consults with the U.S. Fish and Wildlife Service whenever a federal project or action could affect a listed species or its designated critical habitat (see Section 3.7 for details on listed species). The Service then issues a formal biological opinion and recommends appropriate courses of action. A proposed action may be modified or abandoned to satisfy the requirements of the biological opinion. The BLM also cooperates with the Service in developing recovery plans for listed species that occur on BLM-administered lands. The BLM requests technical assistance from the U.S. Fish and Wildlife Service for actions that could affect federal candidate species and requests a conference for actions that could affect species proposed for listing.

The BLM also coordinates with the U.S. Fish and Wildlife Service on decisions that may affect the National Wildlife Refuge System. All or portions of Ruby Lake National Wildlife Refuge, Pahrangat National Wildlife Refuge, and Desert National Wildlife Range occur within the planning area.

The BLM and U.S. Department of Agriculture, Animal and Plant Health Inspection Service work jointly under a national memorandum of understanding on animal damage control, including predator and insect control.

The BLM works with the Natural Resources Conservation Service on soil and water management issues, as well as other resource concerns.

The BLM consults with the U.S. Geological Survey on mineral and water resources and research.

The Department of Defense utilizes much of the airspace above and has numerous surface activities in the planning area. BLM works with the Department of Defense through Nellis Air Force Base on military overflights and surface uses.

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1.8.2 State Agencies

The BLM and Nevada Department of Wildlife work closely on site-specific activities including wildlife habitat and population management, introduction or reintroduction of wildlife species, species recovery activities, vegetation monitoring and evaluation, and the installation of range, fish, and wildlife improvements. Coordination also occurs on the management of State Wildlife Management Areas that are adjacent to BLM-administered lands, and on review of mine plans of operation and NEPA compliance documents.

The Department of Conservation and Natural Resources, Nevada Natural Heritage Program works with the BLM to maintain status and location information for BLM sensitive plant and animal species.

The BLM and Nevada Division of State Parks consult on management of public land adjacent to State parks. Public lands also can be transferred to the State for park purposes.

The BLM consults with the Nevada State Historic Preservation Officer prior to any activities that might adversely affect cultural resources. This consultation involves assessing the potential effects of proposed projects on cultural resources and developing appropriate mitigation measures when adverse impacts cannot be avoided.

The Nevada Division of Minerals manages oil and gas and geothermal development at the state level. The Nevada Division of Environmental Protection participates with the BLM in joint bonding, review, and authorization of mine plans of operation. BLM works closely with these two agencies to avoid duplication in regulations, inspections, and approval of reclamation plans and attempts to minimize costs for mine operators, public, and government.

The BLM and Nevada Division of Environmental Protection work together to meet implementation requirements of the Clean Air Act and Clean Water Act. A Memorandum of Understanding was executed between the agencies in September 2004 to coordinate water quality management efforts.

The BLM, Nevada Department of Agriculture, and County governments cooperate on inventory, study, and management of noxious weeds, and on insect control.

The BLM and Nevada Division of Transportation cooperate and coordinate land use activities and/or authorizations such as road rights-of-way, mineral material sources, communications sites, and other issues related to public highway safety.

1.8.3 Local Government

The Ely Field Office coordinates with a number of county agencies and organizations on mutual goals for resource management and land disposals for public purposes. Coordination includes county commissions, planning departments, soil and water conservation districts, weed control agencies, cultural resource management steering committees, road/highway departments, and the Tri-County Group.

1.8.4 Tribal Governments

The Ely Field Office will coordinate with affected or interested American Indian groups as required or recommended in the National Historic Preservation Act (1966), National Environmental Policy Act (1969), Archaeological Resources Protection Act (1979), Native American Graves Protection and Repatriation Act (1990), executive orders on sacred sites (EO 13007) and government-to-government consultation (EO 13175), and Nevada BLM Instruction Memorandum on the consultation process (IM 2005-008). The BLM also will consult with appropriate Tribal representatives in the early stages of activity planning or projects that may affect Tribal interests, treaty rights, or traditional use areas.

1.8.5 Non-governmental Organizations

To maximize restoration capability and success while achieving mutual goals, including implementation of the Great Basin Restoration Initiative, the Ely Field Office has formed an external partnership with the Eastern Nevada Landscape Coalition. This non-profit community-based partnership has approximately 90 members from businesses, organizations, government agencies, and individuals that represent agricultural, conservation, cultural, environmental, scientific, private enterprise, and other interests. The BLM and other federal agencies work with the Eastern Nevada Landscape Coalition through a cooperative agreement to implement decisions on public land in eastern Nevada. The Eastern Nevada Landscape Coalition is assisting the BLM through the analysis, review, and comment of its Science Committee. In addition, BLM works cooperatively with the Great Basin Cooperative Ecological Systems Study Unit to facilitate the implementation of research to assist in providing both baseline and other studies regarding potential alternative actions to maintain or restore the ecological health and resiliency of Great Basin landscapes within eastern Nevada.

1.9 Consistency with Other Programs, Plans, and Policies

BLM planning regulations require that BLM plans be consistent with officially approved or adopted resource-related plans of other federal, state, local, and Tribal governments to the extent those plans are consistent with federal laws and regulations applicable to public lands. Plans formulated by federal, state, local, and Tribal governments that relate to management of lands and resources have been reviewed and considered as the RMP/EIS has been developed.

1.9.1 Relationship of the RMP/EIS to Federal, State, Local, and Tribal Plans

Management of federal and state lands immediately adjacent to public land administered by the BLM was considered in the formulation of alternative management scenarios and land use allocations. The major planning documents of other federal, state, and local governments considered in the RMP/EIS are listed below. The Ely Field Office communicated on a government-to-government basis with five Tribal groups (Duckwater Shoshone Tribe, Ely Shoshone Tribe, Moapa Band of Piutes, Yomba Shoshone Tribe, and Confederated Tribes of the Goshute Reservation), the first four of which are formal cooperating agencies on the RMP/EIS, regarding any plans or policies that should be reviewed for consistency. No planning documents were provided for this review. Also included here are natural resource data bases maintained by other federal and state agencies that were queried, and state program summaries that provide information on infrastructure and economic development.

Department of Energy

- U.S. Department of Energy, Yucca Mountain Final EIS

National Park Service

- Great Basin National Park Final General Management Plan, Development Concept Plans, EIS, Natural Resources Management
- Great Basin National Park RMP, Updated 2000

U.S. Fish and Wildlife Service

- Big Spring Spinedace Recovery Plan, 1993
- Big Spring Spinedace Recovery Implementation Plan, 1999 (draft)
- Desert Tortoise Recovery Plan, 1994
- Railroad Valley Springfish Recovery Plan, 1997
- Recovery Plan for the Aquatic and Riparian Species of Pahrnagat Valley, 1998
- Southwestern Willow Flycatcher Recovery Plan, 2003
- White River Spinedace Recovery Plan, 1994
- Pahrnagat National Wildlife Refuge, Wildland Fire Management Plan, 2001
- Ruby Lake Management Plan, September 1986
- Ruby Lake National Wildlife Refuge, Fire Management Plan, 2001
- Ruby Lake National Wildlife Refuge, Water Management Plan, May 1988

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U.S. Forest Service, Humboldt National Forest

- Humboldt National Forest Land and RMP, 1986
- Amendment #1 – Humboldt National Forest Land and RMP, December 1989
- Amendment #2 – Humboldt National Forest Land and RMP, July 1990
- Amendment #3 – Humboldt National Forest Land and RMP
- Amendment #4 – Humboldt National Forest Land and RMP
- Amendment #5 – Humboldt National Forest Land and RMP
- Amendment #6 – Humboldt National Forest Land and RMP, August 1996
- Amendment #7 – Humboldt National Forest Land and RMP, November 1998

State of Nevada

- Natural Heritage Program, Lincoln County Rare Species List, 2002
- Natural Heritage Program, Nye County Rare Species List
- Natural Heritage Program, White Pine County Rare Species List, 2002
- Nevada State Parks, Beaver Dam State Park Development Plan, 1992
- Nevada State Parks, Cathedral Gorge State Park Development Plan, No Date
- Nevada State Parks, Cave Lake State Park Development Plan, 1990
- Nevada State Parks, Echo Canyon State Park Development Plan, 1990
- Nevada State Parks, Kershaw-Ryan State Park Development Plan, No Date
- Nevada State Parks, Spring Valley State Park Development Plan, 1992
- Nevada State Parks, Ward Charcoal Ovens State Historic Site Development Plan, 1991
- Nevada State Parks, 2002 SCORP Issues P-1 (Draft)
- State of Nevada, Department of Conservation and Natural Resources, Division of Wildlife, Wayne E. Kirch Wildlife Management Area Conceptual Management Plan, July 2000
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- State of Nevada, Department of Conservation and Natural Resources, Division of Environmental Protection, Memorandum of Understanding for Water Quality Management Activities Within the State of Nevada, September 2004
- State of Nevada, Department of Conservation and Natural Resources, Natural Heritage Program Scorecard, 2000
- State of Nevada, Department of Conservation and Natural Resources, Natural Resource Status Report, August 2002
- State of Nevada, Department of Conservation and Natural Resources, Division of Water Resources, Southern Nevada Surface Water Data Network, 2002
- State of Nevada, Department of Natural Resources, Division of Water Planning, State Water Plan, 1999
- State of Nevada, Department of Transportation, Transportation System Projects 2003-2012 - Lincoln County, 2002
- State of Nevada, Department of Transportation, Transportation System Projects 2003-2012 - Nye County, 2002

1.9 Consistency with Other Programs, Plans, and Policies

- State of Nevada, Department of Transportation, Transportation System Projects 2003-2012, White Pine County, 2002
- State of Nevada, Department of Wildlife, Bighorn Sheep Management Plan, 2001
- State of Nevada, Department of Wildlife, Conservation Assessment of Greater Sage-grouse and Sagebrush Habitats, 2004
- State of Nevada, Department of Wildlife, Greater Sage-grouse Conservation Plan for Nevada and Eastern California, 2004
- State of Nevada, Department of Wildlife, Lincoln County Elk Management Plan, July 1999
- State of Nevada, Department of Wildlife, Nevada Sage-grouse Conservation Strategy, 2004
- State of Nevada, Department of Wildlife, Pahrangat Valley Native Fishes Management Plan, 1999
- State of Nevada, Department of Wildlife, White Pine County Elk Management Plan, March 1999
- State of Nevada, Division of Environmental Protection, Nevada's 2002 303(d.) Impaired Waters List, October 2002
- State of Nevada, Division of Environmental Protection, Nevada Smoke Management Program, July 1999
- State of Nevada, Division of Environmental Protection, Solid Waste Management Program

Mohave County, Arizona

- Mohave County, Arizona, General Plan, March 1995, Revised January 2002

Clark County, Nevada

- Clark County Master Plan, Clark County Federal Lands Element, Adopted July 1, 1997
- Clark County Multiple Species Habitat Conservation Plan and Environmental Impact Statement, September 2000

Eureka County, Nevada

- Eureka County Master Plan, June 2000
- Eureka County Natural Resource Management Ordinance, November 1996

Lincoln County, Nevada

- Alamo Area Land Use Planning Project, 1990
- Lincoln County/City of Caliente, Rachel Area Conceptual Development Plan, 1989
- Lincoln County Master Plan, 2001
- Lincoln County Overall Economic Development Plan, 1991
- Lincoln County Overall Economic Development Plan Update, 1992
- Lincoln County Overall Economic Development Plan, 1998
- Lincoln County Planned Unit Development Ordinance, 2002
- Lincoln County Public Land and Natural Resource Management Plan, 1997
- Lincoln County Regional Transportation Commission, Capital Improvements Plan, 1990
- Water Plan for Lincoln County, 2001

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Nye County, Nevada

- Nye County, Policy Plan for Public Lands, 1985

White Pine County, Nevada

- Public Lands Identified for Transfer from the BLM to Local Government for Community Expansion, 1998, Appendix 2, White Pine County Land Use Plan
- White Pine County, Comprehensive Economic Development Strategy, July 2001
- White Pine County, Emergency Operations Plan, 1994
- White Pine County, Land Use Plan, 1998
- White Pine County, Marketing Manual, August 1997
- White Pine County, McGill Highway Area Master Plan, August 2000
- White Pine County, Nevada Water Resources Plan, 1999
- White Pine County, Overall Economic Development Plan, 1998
- White Pine County, Public Land Use Plan, No Date – estimated date:1993
- White Pine County, Tourism Master Plan Update, June 2001
- White Pine County, Tourism Master Plan, August 2001
- White Pine County, Tourism Master Plan: 2001 Update

Iron County, Utah

- Iron County, Utah – General Plan, Land Use Element, Digital Copy, No Date

Millard County, Utah

- Millard County, Utah – General Plan, Federal and State Lands, No Date

Tooele County, Utah

- Tooele County, Utah – General Plan, Early to mid 1990s

Washington County, Utah

- New Harmony Valley General Plan, Washington County, Utah, July 1997
- Washington County, Utah – General Plan, October 2002
- Washington County, Utah, Wilderness Recommendation – Cougar Canyon Wilderness Area, October 1991

City of Caliente, Nevada

- City of Caliente Master Plan, 1992
- City of Caliente, Wellhead Protection Plan, October 2002
- Fiscal and Capital Improvement Program, Caliente Public Utilities, 1990

City of Ely, Nevada

- City of Ely Master Plan – Business Plan Element, May 1999
- City of Ely, Wellhead Protection Plan, April 2002
- Ely Master Plan, 1999

Regional Organizations

- Panaca Farmstead Association
- Partners in Flight, North American Landbird Conservation Plan, 2004
- The Virgin River Communities Area Plan, May 1998

1.9.2 Relationship of the RMP/EIS to BLM Policies, Plans, and Programs

A number of plans have been developed by the surrounding BLM field offices that relate to management in the Ely District. These RMPs and plan amendments were considered by the Ely Field Office as alternatives for the RMP/EIS were developed. These major plans are listed below and were considered relative to the planning area.

- BLM Arizona Strip Field Office, Decision Record, Arizona Strip RMP – Mojave Desert Amendment, December 1998
- BLM Battle Mountain District, Shoshone-Eureka Resource Area Record of Decision, 1986
- BLM Battle Mountain District, Shoshone-Eureka District RMP Amendment Record of Decision, November 1987
- BLM, Battle Mountain District, Tonopah RMP and Record of Decision, October 1997
- BLM Cedar, Beaver, Garfield, Antimony Record of Decision – RMP, September 1986
- BLM Elko District, RMP Record of Decision, 1987
- BLM Elko District, Wells, Record of Decision, 1985
- BLM Elko District, Wells RMP Approved Wild Horse Amendment and Decision Record, August 1993
- BLM Elko District, Wells RMP Approved Elk Amendment and Decision Record, February 1996
- BLM Fillmore District, Utah, Warm Springs Record of Decision - April 1987
- BLM Record of Decision for the Approved Las Vegas RMP and Final EIS, October 1998
- BLM Richfield District, House Range Record of Decision and RMP, October 1987
- BLM Salt Lake District, Decision Document for the Isolated Tract Planning Analysis: Bear River BLM, Resource Area, Pony Express Resource Area, 1985
- BLM, Salt Lake District, Utah, Pony Express Record of Decision - Pony Express RMP, January 1990
- BLM Salt Lake District, Pony Express Resource Plan Amendment Decision Record, 1997
- BLM, Shivwits Resource Area, Arizona Strip District Approved RMP, January 1992

1.9.3 Consistency with Other Plans

During the development of the Ely RMP/EIS, the planning documents cited above were consulted and considered as alternatives were developed. Parallel RMP-level decisions currently in place on adjoining state and federal lands, including some in Utah and Arizona, and local agency policies were reviewed for consistency with the alternatives analyzed in the Ely RMP/EIS. Management actions identified in the RMP/EIS are substantially consistent with these federal, state, and local planning documents. Where the Ely RMP/EIS does not contain a management action that corresponds with one contained in another agency's planning document (or vice versa), the RMP/EIS was judged to be consistent with the other document.

1.0 INTRODUCTION

While there is not uniformity in land management practices or goals across the region (i.e., they are not identical), management actions are compatible with adjoining jurisdictions, and there is no apparent conflict. Key areas of consistency are highlighted in the following sections, and minor inconsistencies also have been noted. Where consistency or inconsistency would vary among alternatives, this has been indicated. All federal, state, and local agencies and Tribal councils have been requested to review this document and inform the BLM of any additional inconsistencies.

1.9.3.1 Federal Plans and Policies

Wildfire management on the Ely District is directed by the District Fire Plan, which is currently being revised. It was found that fire management guidelines for adjoining BLM Field Offices may be inconsistent in certain locations. For example, an area on the Ely District may be identified as having "few constraints" (requirements) for fire suppression, while the adjoining area on another BLM District may be identified as "full suppression." However, the District Fire Plan has been in effect for several years and has proven to be compatible with fire management on adjoining units overall; therefore, no conflicts are foreseeable.

A potential inconsistency was identified with the management direction for the Humboldt-Toiyabe National Forest, which states "A 100-foot strip of living sagebrush or a distance determined by an interdisciplinary team will be retained around original meadow boundaries and around patches of aspen when conducting vegetative manipulation projects". The Ely Field Office may wish to conduct vegetation treatment in aspen stands on public land. If these stands extend into the National Forest, the treatment on BLM-administered land may not be consistent with the Forest Plan.

The RMP/EIS is not consistent with the designation of critical habitat for the desert tortoise in the southern portion of the District. The boundaries of the three ACECs designated by BLM do not coincide with the boundaries for critical habitat established by the U.S. Fish and Wildlife Service. An agreement was reached between the U.S. Fish and Wildlife Service and BLM through formal consultation on the BLM's Desert Tortoise Amendment, whereby the U.S. Fish and Wildlife Service would revise the critical habitat boundaries to match the desert tortoise ACEC boundaries.

1.9.3.2 State Plans and Policies

The Nevada Division of State Lands currently is preparing an update to the Statewide Public Lands Policy Plan. The BLM has reviewed the preliminary public land management goals identified for the state plan and has found them to be consistent with the RMP/EIS. The state goals will be revisited once they are finalized.

The Nevada State Water Plan states: "Since most water supply sources originate on watersheds managed by federal agencies, their participation in watershed planning and management is essential" (Nevada Department of Natural Resources 1999). The Ely Field Office intends to involve the Nevada Division of Water Planning in the development of watershed restoration plans and is thus consistent with this plan.

The Nevada Smoke Management Program includes the following goal: "Acknowledge the role of fire in Nevada and allow the use of fire under controlled conditions to maintain healthy ecological systems while

1.9 Consistency with Other Programs, Plans, and Policies

meeting the requirements of the Clean Air Act" (Nevada Division of Environmental Protection 1999). Wildland fire use requires an annual permit (including an initial or revised burn plan and map), as well as daily evaluation of the fire to: "determine if the conditions meet the prescription of the permitted burn, and that ambient air quality standards are not being violated." Thus, prescribed and wildland fire use as tools in the restoration of watersheds will require coordination with the State in those areas where the District Fire Plan allows management options other than full suppression.

1.9.3.3 County Plans and Policies

Overall, the management direction contained in the Ely District RMP/EIS is consistent with the planning documents of the three directly affected counties, seven neighboring counties, and two major communities (Ely and Caliente). These jurisdictions have developed a wide range of planning goals addressing topics from recreation to livestock grazing to mineral development. However, the topic that was of greatest interest to the three cooperating counties (White Pine, Lincoln, and Nye) and the City of Caliente during preparation of the RMP/EIS was the future availability of BLM-administered land for economic and community development. These goal statements are presented below. All alternatives with the exception of Alternative D are consistent with each goal.

- White Pine County – "Support the sale or exchange of public land which increases private land holdings in the County available for agriculture, industrial and community development." "Encourage BLM to amend its Resource Management Plan to reflect County goals and implementation strategies for public land and specific parcels identified for transfer to accommodate community expansion needs" (White Pine County 1998).
- Lincoln County – "Lincoln County should help facilitate the exchange of federal (BLM) lands into private ownership for both residential and industrial uses." "The predominance of public lands restricts community expansion and economic development. The county is identifying public lands desired for economic development and/or community expansion" (Lincoln County 2001).
- Nye County – "Increase opportunities for local economic development by selectively increasing the amount of privately owned and locally managed land within the county except for lands with high recreational, wildlife, mineral, and other public values." "Disposal of public lands in a timely fashion to allow the expansion of existing communities, the possible creation of new ones and the construction of needed residential and commercial facilities" (Nye County 1985).
- City of Caliente – "Those lands which could provide needed area for growth adjacent to the city should be identified and pursued for acquisition from the Bureau of Land Management" (City of Caliente 1992).

Four areas where county planning documents are inconsistent with all alternatives in the Ely RMP/EIS were also identified. These are presented below.

1.0 INTRODUCTION

- White Pine County – “White Pine County urges Congress to drop the proposed Wilderness Study Areas located in the County” (White Pine County 1998). All Wilderness Study Areas within the Ely District have been retained in the RMP.
- Lincoln County – “No additional wilderness shall be designated in Lincoln County. It shall be the policy of Lincoln County that any Wilderness Study Area that has been in existence for over 3 years be dropped and returned to multiple use” (Lincoln County 1997).
- Lincoln County – “No additional wetlands shall be designated in Lincoln County. Any wetlands in existence shall not be used by public agencies managing them to harm or impede agriculture or other economic activities in Lincoln County whatsoever” (Lincoln County 1997). Wetland identification and management planning will be a component of the watershed analysis process. It is anticipated that wetlands will be managed for resource values other than agriculture or economic development.
- Lincoln County – On June 20, 1994, the Lincoln County Commission passed a resolution stating that it is “adamantly opposed ... to land exchanges or transfers that take land either off of county tax rolls or place land into a tax exempt status” (Lincoln County Commission Resolution #1994-10). The RMP would allow the acquisition of land through exchange, which could result in a decrease in the number of acres of land on the county tax rolls. Thus, this aspect of the RMP would be inconsistent with the County Resolution.

2.0 ALTERNATIVES

How to Read Chapter 2.0

Chapter 2.0 begins with introductory material describing the development of alternatives and then moves to the presentation of the management direction for resources, resource uses, and management programs encompassing 26 topics. Information is presented in the same sequence in Chapters 3.0 and 4.0 for each of the topic areas. Several of the categories contain subsections that focus on particular aspects of a resource or program.

A table summarizes the management goals for each resource, resource use, or program and compares the management actions for each of the five alternatives considered in detail. The table is followed by detailed descriptions of the management direction. The detailed discussions of the environmental effects of each alternative can be found in Chapter 4.0.

All maps referenced in Chapter 2.0 are presented in the separate Map Volume.

2.1 Introduction

This chapter contains alternatives that describe different approaches to the management of public lands and resources on the Ely District by the Ely Field Office, including the Caliente Field Station. Each alternative represents a complete and reasonable set of goals and management directions to guide future management of public lands and resources in the planning area. As discussed in various sections throughout this document, disturbances such as fire and drought are natural components of the ecological systems of the Great Basin and the Ely District. Many of the management actions considered among the alternatives in this RMP address different approaches to dealing with these disturbances in terms of resource management options.

Five alternatives are presented in this chapter. Alternative A describes the continuation of current, existing management and serves as the No Action Alternative. This alternative is required by Council on Environmental Quality regulations and provides a baseline for comparison of the other alternatives. Four other alternatives (B through E) describe proposed changes to current management as well as what existing management would be carried forward into future management. These alternatives provide a range of choices for resolving the planning issues identified in Chapter 1.0.

Management directions outlined in the alternatives only apply to BLM-administered public land and interests in the planning area.

2.1.1 Development of Alternatives

The development of management alternatives for the Ely RMP/EIS was guided by provisions of the Federal Land Policy and Management Act and the NEPA, as well as planning criteria listed in Chapter 1.0. Other laws, BLM planning regulations, and current policy also directed alternative considerations and focused the alternatives on appropriate land use plan-level decisions. To begin the alternative development process,

2.0 ALTERNATIVES

goals and desired future conditions were identified by the planning team in consideration of public comments received through scoping and direction established by Bureau-wide initiatives and mandates. The goals directed the overall actions proposed within the alternatives. Management direction common to all alternatives that results from law and regulation sometimes applies to all alternatives under a specific goal.

Four management alternatives were developed to address the major planning issues and to provide direction for resource programs influencing land management. Each alternative emphasizes a different combination of resource uses and restoration measures to address issues and resolve conflicts among uses, so program goals are met in varying degrees across the alternatives. Management scenarios for programs not tied to major planning issues and/or mandated by law often contain few or no differences in management among alternatives.

Alternative A, continuation of existing management, is based on existing planning decisions that remain valid, and current direction and policy. The remaining alternatives were developed using input received during scoping, expertise from the interdisciplinary planning team, and comments from cooperating local, state, federal, and Tribal governments.

2.1.2 Intent of the Alternatives

The alternatives in this RMP/EIS are intended to:

- Consolidate management direction for the Ely District into one RMP (current management direction for the District is contained in three land use plans for the Egan, Schell, and Caliente Resource Areas);
- Continue to implement valid existing management direction;
- Provide land use plan level management direction for managing sustainable ecological systems and sustained use of resources based on science and local land capabilities;
- Specify management goals for each resource and/or program;
- Identify actions, priorities, tools, and techniques to achieve goals;
- Identify areas in need of special protection or management;
- Comply with BLM Policy 6840 for the conservation and protection of special status species;
- Facilitate the Great Basin Restoration Initiative through implementation of the Eastern Nevada Landscape Restoration Project;
- Provide programmatic guidance for conducting and implementing management by watershed;

- Provide a basis for analyzing and implementing various decisions directly from the RMP/EIS; and
- Minimize the need for future land use plan amendments.

Implementation is intended to involve:

- Watershed treatments sufficient to meet land health standards;
- Collaboration with others;
- Partnerships with numerous agencies and organizations; and
- Adaptive management through the use of monitoring to improve future decisions.

RMP Management Focus

The restoration and maintenance of healthy ecological systems within watersheds is a primary focus for the future management of the Ely District. Healthy ecological systems are geographically diverse and change over time. They are compatible with soil potential and are resilient to disturbance.

Resources and resource uses will be managed to restore or maintain ecological health. Certain resource management changes and active treatments may need to be implemented, in portions of watersheds, to accomplish this objective. Adaptive management will be pursued to avoid deteriorating conditions that favor invasive plants and catastrophic fires. Any projects will be implemented so as to result in a mosaic of vegetation within a watershed.

In the long term, natural disturbance (such as drought or fire) will occur and fewer treatments will be needed to maintain ecological health. The result will be a variety of vegetation phases, which will provide diverse, healthy conditions for future generations.

2.2 Overview of Alternatives**2.2.1 Alternative A**

Alternative A is the continuation of existing management on the Ely District, also called the "No Action Alternative" under NEPA regulations. This alternative would continue present management practices based on existing land use plans and other management decision documents. Valid decisions contained in the Egan RMP, the Egan RMP Oil and Gas amendment, the Schell and Caliente Management Framework Plans (MFP), and the Caliente MFP Desert Tortoise Amendment would be implemented if not already completed. Direction contained in existing laws, regulation, and policy also would continue to be implemented, sometimes superseding provisions of the Egan RMP and Schell and Caliente MFPs. Resources, resource uses, and sensitive habitats would receive management emphasis at present levels. Restoration of ecological systems would utilize either active or passive methods, and would be implemented primarily in reaction to changes that occur from events such as fire or other disturbances. Restoration activities would be conducted on approximately 10,000 acres per year. Increases in herbaceous vegetation resulting from restoration would be allocated to livestock and wild horses as directed in the existing plans. Vegetation communities would be managed to achieve appropriate composition of woody and herbaceous species that promote resiliency. This would involve a mosaic of vegetation communities having differing ages (since treatment) and differing composition and structure. The current levels, methods, and mix of multiple use management of public land would receive attention at present levels. The three Areas of Critical Environmental Concern (ACECs) designated in the Desert Tortoise Amendment would be retained. In general, most activities would be analyzed on a case-by-case basis, and few uses would be limited or excluded as long as land health standards could be met. Off-highway vehicle use would remain relatively unrestricted throughout the District; there would be no recreation management areas with an emphasis on off-highway vehicle use of designated roads and trails. Fire management would continue under the existing Ely Managed and Natural Fire Plan, which provides for the beneficial use of fire in selected situations.

2.2.2 Alternative B

Alternative B would emphasize the maintenance of those systems that are functioning and healthy and the restoration of ecological systems and their historic mosaic patterns that have been degraded or altered. There would be a coordinated effort to restore the resiliency of native vegetation in shrub communities, woodlands, and riparian areas. Commodity production would be constrained to protect resources and systems that display healthy ecological processes or to accelerate improvement in those areas that do not. Production of food, fiber, minerals, and services would be more constrained than in the other alternatives, and in some cases and some areas, uses would be excluded to protect sensitive resources. Restoration would utilize either active (such as brush clearing) or passive (such as changes in livestock grazing) methods, and would be implemented proactively to build resiliency and resistance to changes that would degrade natural systems. Restoration activities would be accelerated in comparison to Alternative A and limited by available funding and resources. Increases in herbaceous vegetation resulting from restoration would be reserved for watershed maintenance and wildlife. Sagebrush communities would be managed to achieve a mosaic of herbaceous/shrub phases with minimal bare ground; interspaces between shrubs would be occupied by perennial grasses and forbs. The three ACECs designated in the Desert Tortoise

2.0 ALTERNATIVES

amendment would be retained, and 18 new ACECs also would be designated. Under this alternative, management would more often be applied across several vegetation types with a restoration emphasis on those areas most at risk of crossing a threshold into a less desirable vegetation community or ecological process, rather than focusing on specific sensitive resources in particular geographic areas. Off-highway vehicle use would be restricted to designated roads and trails; recreation management on approximately 310,000 acres would emphasize off-highway vehicle use of designated roads and trails. Fire use would be implemented to the greatest extent possible as a vegetation treatment tool following watershed analysis.

2.2.3 Alternative C

Alternative C would emphasize commodity production and production of food, fiber, minerals, and services, including provisions for several types of recreation. Under this alternative, constraints on commodity production for the protection of sensitive resources would be the least restrictive possible within the limits defined by law, regulation, and BLM policy, including the Endangered Species Act, cultural resource protection laws, and wetland preservation. In this alternative, constraints to protect sensitive resources would tend to be implemented in specified geographic areas rather than across the planning area. Active and organized recreation activities (such as off-highway vehicle use and races) would be emphasized in this alternative. Restoration of ecological systems would utilize either active or passive methods. Restoration activities would be accelerated in comparison to Alternative A and limited by available funding and resources. Increases in herbaceous vegetation resulting from restoration would be allocated to livestock. Land health restoration activities would focus on areas with understory vegetation appropriate for the ecological site, which could provide the production of additional forage. Sagebrush communities would be managed to achieve sites dominated by herbaceous vegetation (i.e., grasses) with some shrubs. The three ACECs designated in the Desert Tortoise Amendment would be retained, and 20 new ACECs also would be designated. Off-highway vehicle use would be restricted to designated roads and trails; recreation management on approximately 734,000 acres would emphasize off-highway vehicle use of designated roads and trails. All wildland fires would be suppressed and prescribed fires would be used only in limited situations as a vegetation treatment tool.

2.2.4 Alternative D

Alternative D would exclude all permitted, discretionary uses of the public lands including livestock grazing, mineral sale or leasing, lands and realty actions (such as disposals, leases, rights-of-way), recreation uses requiring permits, etc. The Ely Field Office would petition the Department of the Interior to withdraw a majority of the planning area from locatable mineral entry. This alternative would allow no commodity production and would include management actions necessary to maintain or enhance resources and protect life and property. Any management actions would utilize primarily passive methods. Active restoration would be restricted to previously treated areas (such as chainings and seedings), areas dominated by invasive species, and newly disturbed areas (such as those resulting from wild fires). Restoration activities would be focused toward a much narrower set of conditions than in Alternatives B and C. Such restoration would be primarily in reaction to changing conditions. Increases in herbaceous vegetation resulting from restoration would be reserved for watershed maintenance and wildlife or allocated wild horses. Sagebrush communities would be managed to protect existing native communities and to prevent invasions of annual exotic species. No ACECs would be retained or designated. Off-highway vehicle use would be restricted to maintained

roads. Some components of the alternative may not be possible to implement because of legal constraints, but the alternative is included for purposes of impact comparison. Wildland fires would not be suppressed unless they are human-caused or threaten life or property.

2.2.5 Alternative E

Alternative E is the Ely Field Office's preferred alternative, and represents a shift from a commodity or individual resource allocation approach to an ecological systems approach to management (as described for the Eastern Nevada Landscape Restoration Project in Section 1.3.3.1). This alternative emphasizes improvement in ecological conditions and a high level of natural resource protection created by managing natural and manmade disturbances to avoid crossing vegetation thresholds while also providing for resource uses. This alternative would balance the need to restore, enhance, and protect resources, with the public's desire to provide for the production of food, fiber, minerals, and services on public lands. This would be done within the limits of an ecological system's ability to sustainably provide these products and services within the constraints of various laws and regulations. Restoration would utilize either active or passive methods, and would be implemented proactively to build resiliency to prevent further degradation of ecological systems. Restoration activities would be accelerated in comparison to Alternative A and limited by available funding and resources. Increases in herbaceous vegetation resulting from restoration would be distributed in a balanced approach with reservations for watershed and wildlife and allocations to livestock and wild horses. Sagebrush communities would be managed to achieve a variety (mosaic) of phases (age classes) of sagebrush types with emphasis on shrub/herbaceous communities. Vegetation resources and fish and wildlife habitats would be restored and enhanced using a variety of tools, but to a lesser extent than Alternative B. However, constraints to protect sensitive resources could be implemented in specified geographic areas. The three ACECs designated in the Desert Tortoise Amendment would be retained, and 18 new ACECs also would be designated. Off-highway vehicle use would be restricted to designated roads and trails; recreation management on approximately 734,000 acres would emphasize off-highway vehicle use of designated roads and trails. Fire use would be implemented to the greatest extent possible as a vegetation treatment tool following watershed analysis.

2.3 Foundational Management Direction

The following management directions would be implemented by the Ely Field Office in association with all alternatives.

2.3.1 Land Health Standards

Agency regulations require that BLM State Directors develop state and regional standards and guidelines for administration of public lands in consultation with BLM Resource Advisory Councils, other agencies, and the public. There are two Resource Advisory Councils that guide the Ely District: the Northeastern Great Basin and the Mojave/Southern Great Basin (see Appendix A). They each have developed a set of similar and complimentary land health standards by which ecological system and rangeland "health" of the Ely District can be assessed. The BLM's continued use of these standards is an inherent part of the foundation for this RMP/EIS.

2.3.2 Activity Plans

Program-specific "activity plans" have been written over the years to address on-the-ground implementation of the approved land use plans. These activity plans also met the BLM's NEPA obligation with a site-specific analysis upon which to base a decision. Since this Ely RMP/EIS is primarily programmatic, it would not analyze management direction to the level of detail contained within these more site-specific activity plans. The RMP/EIS would serve as an umbrella for the various activity plans. Once the Ely District RMP is completed and approved, all of the activity plans that are in conformance with the revised RMP would continue to provide management direction for program-specific actions. Those activity plans that are not in conformance with the approved Ely RMP either would be updated to clearly reflect that they are implementing the direction in the approved RMP, or they would be replaced, as needed, to provide appropriate management direction. See Appendix G for examples of activity plans.

2.3.3 Tools and Techniques

A wide variety of tools and techniques would be applied as appropriate to implement the management direction identified in the following sections. These tools and techniques are based on current management practices and procedures applicable to the District, and are meant to represent best management practices. The array of tools and techniques identified in Appendix E illustrates those measures that would be applied as appropriate and where necessary in implementing all alternatives. It must be emphasized that Appendix E is not exhaustive or site-specific. It is anticipated that new tools and techniques would be developed during the useful life of this plan, and all tools and techniques could be used in all parts of the District where they are appropriate and effective.

2.4 Summary of Management Direction by Alternative

Table 2.4-1 presents a summary of the management direction for each alternative that is being analyzed in this RMP/EIS. Certain management direction (i.e., management common to all alternatives) would be implemented by the Ely Field Office regardless of which alternative is selected, and it is not included in this summary table. However, impact analysis has been conducted by assuming that this management direction remains in place. Where management common to all alternatives is applicable to a given resource program, it is included with the narratives in Section 2.5. The summary table is first organized by resource program and then subdivided by management goal and management parameters. The management direction that addresses each parameter is then presented. Various tools and techniques (presented in Appendix E), standard operating procedures (presented in Appendices H and I), best management practices (presented in Appendices B, J, and K), standard terms and conditions for mineral leasing (presented in Appendix L), and standard requirements for lands and realty actions (presented in Appendix N) also are important components of the management of resources by the Ely Field Office. Lastly, the management direction that has been selected by BLM to comprise the agency preferred alternative (Alternative E) also is presented in **Table 2.4-1**.

All maps referenced in **Table 2.4-1** are presented in a separate map volume. A more detailed presentation of the management actions identified in **Table 2.4-1** is contained in Section 2.5, Management Direction for Resource Programs.

Table 2.4-1
Summary Comparison of Alternatives

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
PHYSICAL AND BIOLOGICAL RESOURCES				
CLIMATE AND AIR QUALITY				
Goal – Meet all applicable local, state, Tribal, and National Ambient Air Quality Standards under the Clean Air Act (as amended), and prevent significant deterioration of air quality within the Ely District from all direct and authorized actions.				
No management actions specific to individual alternatives are presented for this resource. Management common to all alternatives is presented in Section 2.5.2.				
WATER RESOURCES				
Goal – Restore and maintain the chemical, physical, and biological integrity of the waters in the Ely District to maintain healthy ecological systems while sustaining multiple uses.				
No management actions specific to individual alternatives are presented for this resource. Management common to all alternatives is presented in Section 2.5.3.				
SOIL RESOURCES				
Goal – Maintain or improve long-term soil quality.				
No management actions specific to individual alternatives are presented for this resource. Management common to all alternatives is presented in Section 2.5.4.				
VEGETATION				
Goal – Where possible, manage vegetation resources to achieve or maintain resistant and resilient ecological conditions while providing for sustainable multiple uses and options for the future across the landscape.				
Parameter – Pinyon-juniper Woodland (see Section 2.5.5.1)				
Continue case-by-case management to reduce the amount of over-mature woodlands or woodlands near the threshold of mature/over-mature.	Pinyon-juniper communities would be proactively managed to achieve a variety of disturbance-resistant phases that would be resilient to disturbance and provide essential wildlife habitat.	Pinyon-juniper communities would be managed to achieve phases that would provide more products for commercial use.	Natural processes would be allowed to occur within pinyon-juniper woodlands and most discretionary land uses would be eliminated.	Same as Alternative B.
Actively treat 1,149,900 acres (32%) of the pinyon-juniper woodland and maintain 2,443,500 acres (68%) that are in desired states.	Actively treat 2,766,900 acres (77%) of the pinyon-juniper woodland and maintain 826,500 acres (23%) that are in desired states.	Same as Alternative B.	Allow wildland fires and weed treatment on 1,868,600 acres (52%) of the pinyon-juniper woodland and maintain 1,724,800 acres (48%) that are in desired states.	Same as Alternative B.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Parameter – Aspen (see Section 2.5.5.2)				
Select aspen communities would be managed to increase regeneration of aspen trees and understory species.	Proactive management of aspen communities would cause them to remain in or move toward resilient phases that would be resistant to disturbance.	Aspen sites would be managed to achieve phases that support commodity production.	Natural processes would be allowed to occur and management would primarily be passive. Most discretionary land uses would be eliminated.	Same as Alternative B.
Actively treat 1,400 acres (20%) of the aspen woodland and maintain 5,600 acres (80%) that are in desired states.	Actively treat 4,130 acres (59%) of the aspen woodland and maintain 2,870 acres (41%) that are in desired states.	Actively treat 4,830 acres (69%) of the aspen woodland and maintain 2,170 acres (31%) that are in desired states.	Allow fire use and weed treatment on 1,050 acres (35%) of the aspen woodland.	Same as Alternative B.
Parameter – High Elevation Conifer Species (White Fir, Ponderosa Pine, Limber Pine, Bristlecone Pine, Engelmann Spruce, etc.) (see Section 2.5.5.3)				
Management actions would focus on the introduction of fire through the management of wildland fire or prescribed fire.	Management actions would focus on preventative rather than remedial treatments before sites cross thresholds to undesirable phases.	Accessible sites would be managed for commodity products.	Passive management would allow natural processes to occur.	Same as Alternative C.
Actively treat 9,600 acres (17%) of the high-elevation conifer species and maintain 46,400 acres (83%) that are in desired states.	Actively treat 29,200 acres (52%) of the high-elevation conifer species and maintain 26,800 acres (48%) that are in desired states.	Actively treat 44,240 acres (79%) of the high-elevation conifer species and maintain 11,760 acres (21%) that are in desired states.	Allow fire use and weed treatment on 28,000 acres (50%) of the high-elevation conifer species.	Same as Alternative C.
Parameter – Salt Desert Shrub (Shadscale, Winterfat, Four-Wing Salt Bush, etc.) (see Section 2.5.5.4)				
Treat and restore select habitat sites that have been invaded by exotic species at the watershed level.	Manage to achieve plant composition within the desired range of conditions to increase or decrease shrubs and perennial herbaceous composition and restore areas invaded by exotic species.	Manage to increase forage production for commodity use and maintain diverse mosaics and connectivity between geographic areas to provide required habitat for game species, especially special status and threatened and endangered species.	Passively manage existing native salt desert shrub communities and actively treat invasions of exotic species.	Same as Alternative B.

2.0 ALTERNATIVES

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Actively treat 219,800 acres (18%) of the salt desert shrub and maintain 1,001,200 acres (82%) that are in desired states.	Same as Alternative A.	Actively treat 390,700 acres (32%) of the salt desert shrub and maintain 830,300 acres (68%) that are in desired states.	Allow fire use and weed treatment on 219,800 acres (18%) of the salt desert shrub.	Same as Alternative A.
Parameter – Sagebrush (basin big sagebrush, Wyoming big sagebrush, and black sagebrush) (see Section 2.5.5.5)				
Treat areas where pinyon-juniper is encroaching into sagebrush sites. Maintain plant communities in the herbaceous and shrub states. Increase the use of fire and increase seeding following fire.	Manage to achieve plant composition within the desired range of conditions to increase or decrease sagebrush overstory for specific habitat objectives.	Manage to achieve high productivity of commodity values while maintaining and enhancing ecological health and resilience.	Allow sagebrush communities to function as naturally as possible with minimal influence from management or resource uses. Return sagebrush areas that have been seeded with nonnative species to native species.	Same as Alternative B.
Actively treat 1,348,700 acres (24%) of the sagebrush and maintain 4,270,800 acres (76%) that are in desired states.	Actively treat 3,090,700 acres (55%) of the sagebrush and maintain 2,528,800 acres (45%) that are in desired states.	Actively treat 4,214,600 acres (75%) of the sagebrush and maintain 1,404,900 acres (25%) that are in desired states.	Allow fire use and weed treatment on 1,461,100 acres (26%) of the sagebrush.	Same as Alternative B.
Parameter – Mountain Mahogany (see Section 2.5.5.6)				
Manage in the same way as the associated or surrounding sagebrush communities.	Manage proactively to maintain or enhance diversity, mosaics, and connectivity of the surrounding sagebrush communities and satisfy wildlife habitat requirements.	Manage to achieve the phases with the greatest potential for commodity production. Emphasize wildlife habitat needs in critical habitat areas only.	Allow natural processes to occur. Limit land uses and treat areas where invasive and nonnative species are present.	Same as Alternative B.
Actively treat 6,900 acres (15%) of the mountain mahogany and maintain 39,100 acres (85%) that are in desired states.	Actively treat 23,000 acres (50%) of the mountain mahogany and maintain 23,000 acres (50%) that are in desired states.	Actively treat 36,340 acres (79%) of the mountain mahogany and maintain 9,660 acres (21%) that are in desired states.	Allow fire use and weed treatment on 25,300 acres (55%) of the mountain mahogany.	Same as Alternative B.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Parameter – Mojave Desert Vegetation (see Section 2.5.5.7)				
Manage uses in the Mojave Desert areas to maintain or improve vegetation composition and protect critical desert tortoise habitat.	Same as Alternative A, except that livestock grazing would be eliminated and all Mojave Desert vegetation within desert tortoise habitat (approximately 850,000 acres) would be protected from conversion to undesirable vegetation.	Manage for desired range of conditions with an emphasis on providing watershed protection and commodity uses.	Allow Mojave Desert communities to function as naturally as possible. Livestock grazing would be eliminated.	Same as Alternative A.
Parameter – Riparian/Wetlands (see Section 2.5.5.8)				
Manage uses to achieve or make progress toward proper functioning condition.	Maintain or restore plant community structure and composition of desired grasses, sedges, forbs and shrubs on riparian habitats where possible and as appropriate to site potential.	Maintain or restore plant community structure and composition of desired species of grasses, sedges, forbs, and shrubs on riparian habitats where possible and as appropriate to site potential while providing for commodity production.	Manage riparian areas and allow natural processes to occur as nearly as possible. Treat riparian areas that have invasive or exotic species.	Same as Alternative B.
Parameter – Nonnative Seedlings (see Section 2.5.5.9)				
Manage uses to maintain or improve the composition of understory species for multiple use objectives.	Manage nonnative seedlings to achieve the desired range of conditions.	Manage to allow the majority of the area to remain in the herbaceous and shrub states.	Restore nonnative seedlings to the original native plant community.	Same as Alternative B.
Actively treat 45,800 acres (17%) of the nonnative seedlings and maintain 223,700 acres (83%) that are in desired states.	Actively treat 80,800 acres (30%) of the nonnative seedlings and maintain 188,700 acres (70%) that are in desired states.	Actively treat 134,700 acres (50%) of the nonnative seedlings and maintain 134,800 acres (50%) that are in desired states.	Allow fire use and weed treatment on 29,600 acres (11%) of the nonnative seedlings.	Same as Alternative B.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
FISH AND WILDLIFE				
Aquatic Habitat and Fisheries				
Goal – In cooperation with the Nevada Department of Wildlife, manage suitable aquatic habitats to sustain nonnative fisheries and minimize conflicts between nonnative and native fish species. (Bonneville cutthroat trout are discussed under Special Status Species.) Native nongame fisheries are discussed in the Special Status Species section.				
Parameter – Aquatic Habitat and Fisheries (see Section 2.5.6.1)				
Manage fishery habitat to maintain existing nonnative fisheries in cooperation with Nevada Department of Wildlife. In water bodies where nonnative and native fisheries coexist, conflicts would be addressed on a case-by-case basis.	Aquatic and terrestrial riparian habitats would be actively managed to maintain and enhance native game fisheries and eliminate conflicts between nonnative and native game species.	Manage fishery habitat to enhance nonnative fisheries. Mitigate nonnative and native fisheries conflicts.	Maintain, protect, and restore native fisheries. Nonnative fishery habitat would not be actively managed.	Same as Alternative B.
Implement special riparian use restrictions or limitations on a case-by-case basis to protect nonnative fisheries.	Management for riparian proper functioning conditions would be assumed to meet the habitat needs of aquatic species including nonnative fish.	Same as Alternative A.	Aquatic and terrestrial riparian habitat would be primarily managed passively from the exclusion of discretionary commodity uses of public lands.	Same as Alternative B except that riparian fishery components of allotments would be assessed through Rangeland Health Standards Assessments (due to be completed 2009).
Terrestrial Wildlife				
Goal – In cooperation with Nevada Department of Wildlife, provide habitat for wildlife (i.e., forage, water, cover, and space) that is of sufficient quality and quantity to support productive and diverse wildlife populations, in a manner consistent with the principles of multiple-use management, to enhance biological diversity, and to sustain the ecological, economic, and social values necessary for all species.				
Parameter – Wildlife Habitat Management (see Section 2.5.6.2)				
Wildlife habitat projects are primarily performed for big game species and are actively guided by cooperatively-developed state, local, and BLM habitat management plans.	Wildlife habitat management would emphasize active and passive vegetation restoration for both game and nongame species where no known conflicts with native species exist.	Wildlife habitat management would be performed for game species that offer the greatest recreational opportunities and economic stimulus to local economies.	Wildlife habitat management would emphasize a passive and indirect management approach to restoration for both game and nongame species through the exclusion of discretionary uses of public lands.	Same as Alternative B.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
<p>Parameter – Wildlife Water Developments (see Section 2.5.6.3)</p> <p>Install wildlife water developments on a case-by-case basis to meet the habitat needs of various wildlife species. Water developments are evaluated based on Nevada Department of Wildlife water development criteria.</p>	<p>Water management and riparian restoration would be emphasized to provide reliable sources of water to wildlife. No emphasis to water developments would occur to increase game species distribution or density beyond what natural water source availability and location could support. Water developments would be used primarily to mitigate multiple-use impacts to game and non-game wildlife species from loss of habitat or reduction of natural waters source availability. Water developments would be evaluated based on BLM water development criteria.</p>	<p>Same as Alternative A, except water developments would be maximized to expand suitable habitats and increase the distribution and density of economically significant wildlife populations to provide increased recreational opportunities. Water developments would be secondarily used to mitigate for impacts to game species from loss of habitat or natural water sources.</p>	<p>Removal of permitted uses from public lands would be the primary emphasis to provide reliable sources of water to wildlife. No emphasis to water developments would occur to increase game species distribution or density beyond what natural water source availability and location could support. Water developments would be used primarily to mitigate multiple-use impacts to game and non-game wildlife species from loss of habitat or reduction of natural waters source availability.</p>	<p>A combination of water management through riparian restoration and water developments would primarily be used to meet the public demand for increased game species distribution and density and provide increased recreational opportunities, beyond what natural water source availability and location would support. Water developments would be used secondarily to mitigate multiple-use impacts on game and non-game wildlife species from loss of habitat or natural waters sources. Water developments would be evaluated based on BLM water development criteria. No existing water developments would be removed.</p>

2.0 ALTERNATIVES

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Parameter – Migratory Bird Habitat Migratory birds would be managed in consideration of best management practices that were developed in response to Executive Order 13186.	Alternative B Habitat (including sagebrush-obligate species) (see Section 2.5.6.4) Avian life history and habitat needs for migratory bird species (as identified in BLM Best Management Practices, Nevada Partners in Flight, and U.S. Fish and Wildlife Service Birds of Conservation Concern) would be factored into maintenance, conservation, and restoration actions District-wide through watershed analysis and on a case-by-case basis. Migratory bird spatial and temporal habitat needs would be factored into a landscape approach to achieve proper mosaics of vegetation, as quantified in the vegetation section.	Same as Alternative A.	Conservation actions for migratory bird habitat would emphasize the exclusion of discretionary uses of public lands. Management actions would be primarily passive.	Same as Alternative B.
Parameter – Nonnative Upland Game Bird Habitat (see Section 2.5.6.5) Vegetation communities would not be actively managed for the habitat needs of nonnative upland game.	Same as Alternative A.	Manage habitat to maximize existing nonnative game bird populations and work with the Nevada Department of Wildlife to explore other nonnative game bird management opportunities.	Same as Alternative A, except the Nevada Department of Wildlife would be encouraged to eliminate established nonnative game bird populations and not establish any new nonnative game birds.	Nonnative game birds would be managed indirectly through restoration of natural systems that have been affected by various disturbance factor where no known conflicts with native species exist.

2.4 Summary of Management Direction by Alternative

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Parameter – Great Basin Big Game Habitat (Mule Deer, Pronghorn, and Elk) (see Section 2.5.6.6)	Parameter – Great Basin Big Game Habitat (Mule Deer, Pronghorn, and Elk) (see Section 2.5.6.6)	Parameter – Great Basin Big Game Habitat (Mule Deer, Pronghorn, and Elk) (see Section 2.5.6.6)	Parameter – Great Basin Big Game Habitat (Mule Deer, Pronghorn, and Elk) (see Section 2.5.6.6)	Parameter – Great Basin Big Game Habitat (Mule Deer, Pronghorn, and Elk) (see Section 2.5.6.6)
Big game species habitats would be managed to support increased game species numbers, distributions, and densities beyond what natural habitats and water sources would support. The needs of non-game species would not be factored heavily into habitat management actions. Wildlife projects would be performed to address an immediate need or habitat niche for an individual big game species on a case-by-case basis. No management emphasis would be developed or implemented to prioritize efforts toward management of any seasonal big game habitats.	Big game species habitats would be managed in consideration of the seasonal and temporal habitats for wildlife species that are appropriate to the landscape and in balance with the natural carrying capacity of the land and water sources. The needs of all wildlife would be factored into habitat management actions at a landscape scale. A maintenance and restoration approach would be emphasized to manage shrubland habitats for the early-mid phase of the herbaceous state. The management emphasis in watershed restoration plans would prioritize: 1) designated crucial habitats; 2) migratory corridors; 3) other seasonal habitats across the landscape.	Big game species habitats would be managed to support increased game species numbers, densities, and distributions. The needs of non-game species would minimally be factored into habitat management actions. Elk habitats would be managed to create a predominantly early phase of the herbaceous state. Mule deer and antelope habitats would be actively managed where no direct conflicts with livestock or commodity oriented objectives occur. No management emphasis would be developed or implemented to prioritize efforts toward any seasonal big game habitats.	Big game species habitats would not be actively managed to increase distribution or density beyond what natural habitats and water sources would support. Conservation actions for all wildlife habitats primarily would emphasize the exclusion of permitted uses of public lands. Habitat restoration would be emphasized secondarily where human-induced alterations have modified the natural environment.	Big game species habitats would be managed to meet the public demand for increased game species distributions and densities, but in balance with other wildlife habitat objectives. The needs of game and non-game wildlife would be factored into habitat management actions at a landscape scale and designed to minimize or eliminate conflicts identified with special status, game, and non-game species habitats. A maintenance and restoration approach would be emphasized to manage shrubland habitats for the early-mid phase of the herbaceous state. The management emphasis in watershed restoration plans would prioritize efforts toward: 1) designated crucial habitats; 2) migratory corridors; and 3) other seasonal habitats across the landscape.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Parameter – Great Basin (Sagebrush, Salt Desert Shrub, Woodlands, Conifer Forests, and Riparian Habitat Types) (Rocky Mountain Bighorn Sheep)				
Rocky Mountain bighorn sheep populations would be maintained only on Mount Grafton and Mount Moriah. When changes to BLM grazing permits are being considered, domestic sheep would be managed in consideration of the Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats (IM No-98-140).	Rocky Mountain bighorn sheep would be managed in all historic ranges and all historic seasonal habitats. Domestic livestock (sheep and cattle) grazing would be eliminated in all Rocky Mountain bighorn sheep ranges and migration routes.	Same as Alternative A.	A passive and indirect management emphasis would exclude all commodity uses of public lands.	Same as Alternative A.
Habitat management of high and low elevation habitats would occur on a small scale and indirectly through wildfire emergency stabilization projects.	Habitat management of high and low elevation habitats would occur directly from active large-scale restoration and indirectly through wildfire emergency stabilization projects.	Low elevation habitat management would occur directly from active large-scale restoration. High elevation habitats would not be managed for active restoration. Both high and low elevation habitats would be managed indirectly through wildfire emergency stabilization projects.	Passive management would be emphasized over active management. Active habitat restoration for desert bighorn sheep would be emphasized only in areas affected by wildfires or where invasive species dominate.	Same as Alternative B.
SPECIAL STATUS SPECIES				
Goal – Manage public land to maintain, restore, improve, or enhance populations and habitats which lead to the recovery of federally listed species and preclude the need for listings of proposed, candidate, state-protected, or sensitive species.				
Parameter – General Special Status Species (see Section 2.5.7.1)				
Special status species management would address an immediate need or habitat niche for the maintenance, mitigation, and restoration of a single special status species.	Special status species management would be specifically assessed in relation to overall habitat conditions and identification of causal factors for declines within the District.	Same as Alternative A.	Special status species management would emphasize a passive and indirect management approach through the exclusion of discretionary uses of public lands.	Same as Alternative B.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Parameter – Bats (see Section 2.5.7.2)				
Bats would be managed by actions identified in the Ely District Cave Management Plan, and by restricting recreation actions and activities.	Important roosting and foraging habitats for bats would be identified independently of watershed analysis and proactive measures would be implemented to conserve, protect, and restore these habitats.	Same as Alternative B, except restoration actions for bats would be emphasized only in areas where no conflicts with commodity objectives occur.	Same as Alternative A.	Same as Alternative B, except that bats would be managed by actions identified in the final Nevada Bat Conservation Plan.
Parameter – Great Basin Riparian Habitats (see Section 2.5.7.3)				
Special Status Species Included in RMP U.S. Fish and Wildlife Service Section 7 Consultation Pahrump poolfish-(see Management Common to All Alternatives in Section 2.5.7) White River spinedace-(see Management Common to All Alternatives in Section 2.5.7) Railroad Valley springfish-(see Management Common to All Alternatives in Section 2.5.7) Big Spring spinedace Meadow Valley Wash desert sucker Meadow Valley Wash speckled dace Ute ladies'-tresses				
Shoshone Pond has been and would remain fenced by BLM to provide a U.S. Fish and Wildlife Service refuge for endangered Pahrump poolfish.	A new fence would be built around Shoshone Pond to exclude both human and livestock access into the area and expanded in size to protect the aquatic environments from excessive upland siltation and run-off.	The Shoshone Pond fence would be repaired to the original size and specifications.	The Shoshone Pond fence would be re-built to the original footprint and designed solely to restrict human access into the area.	Same as Alternative B.
No known locations of Ute ladies'-tresses exist in the Ely District and no active BLM management for the species occurs.	BLM would initiate a systematic survey of potential habitats for Ute ladies'-tresses and initiate recovery actions and a conservation strategy for any discovered occurrences of the species or areas with habitat potential for the species.	Same as Alternative A.	Same as Alternative B.	BLM would survey and monitor federal lands for Ute ladies'-tresses, based on the availability and assistance of the U.S. Fish and Wildlife Service and U.S. Fish and Wildlife identification of potential areas and habitats for the species. Conservation and recovery actions would be implemented on any discovered occurrences.

2.0 ALTERNATIVES

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Parameter – Mojave Desert and Great Basin Riparian Habitats (see Section 2.5.7.4) Special Status Species Included in RMP U.S. Fish and Wildlife Service Section 7 Consultation Southwestern willow flycatcher Western yellow-billed cuckoo Meadow Valley Wash desert sucker Meadow Valley Wash speckled dace Arizona southwestern toad				
Currently, there are no ACECs designated for these species. Habitat management would not be prioritized based on watershed analysis. Changes in the livestock season would be implemented by agreement only.	The Rainbow, Carp, and Rox portions of the Lower Meadow Valley Wash would be designated as the Lower Meadow Valley Wash ACEC. Within the Meadow Valley Wash and outside the ACEC, habitat management of watersheds would be prioritized based on the results of the watershed analysis. Livestock grazing would be excluded from all areas of Lower Meadow Valley Wash.	Same as Alternative A, except the Lower Meadow Valley Wash ACEC would be managed based on multiple-use objectives for increased forage production and developed and managed recreation. Baseline livestock utilization levels, and season-of-restrictions, and special use designations would not be enacted unless livestock were determined to be a casual factor for nonattainment of standards, and utilization and special use restrictions.	The Lower Meadow Valley Wash ACEC would not be designated. Management would emphasize the exclusion of discretionary uses of public lands and restoration of natural hydrology.	Same as Alternative B, except that within the northern portion of the Lower Meadow Valley Wash livestock grazing in riparian habitat would occur in accordance with the southwestern willow flycatcher recovery plan.
Parameter – Mojave Desert Riparian Habitats (see Section 2.5.7.5) Special Status Species Included in RMP U.S. Fish and Wildlife Service Section 7 Consultation White River springfish-(see Management Common to All Alternatives in Section 2.5.7) Hiko White River springfish-(see Management Common to All Alternatives in Section 2.5.7) Pahranagat roundtail chub-(see Management Common to All Alternatives in Section 2.5.7)				

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Parameter – Mojave Desert Desert Scrub Habitats (see Section 2.5.7.6) Special Status Species Included in RMP U.S. Fish and Wildlife Service Section 7 Consultation Desert tortoise-(see management actions below and Management Common to All Alternatives in Section 2.5.7) Banded Gila monster				
Mojave Desert special status species would receive protection from provisions of the Caliente Management Framework Plan Amendment. Multiple use management actions that may adversely impact these habitats would be assessed on a case-by-case basis.	Same as Alternative A, except watershed analyses would be used to evaluate if any potential exists for additional management, restrictions, or restoration actions, to protect or enhance habitats. Livestock grazing would not occur within the Mojave Desert portion of the district that includes desert tortoise habitat (see Map 2.4-39).	Same as Alternative A.	Natural processes would be allowed to function and dictate the mosaics of special status species habitats within the Mojave Desert and other habitats managed by the Ely Field Office.	Same as Alternative B except livestock grazing would be managed with special use restrictions within desert tortoise habitats outside of ACECs.
Parameter – Mojave Desert Mountain and Desert Scrub Habitats (see Section 2.5.7.7) Special Status Species Included in RMP U.S. Fish and Wildlife Service Section 7 Consultation Desert Bighorn Sheep				
Desert bighorn sheep would be maintained in a percentage of their historic range and in portions of their seasonal habitats. When changes to BLM grazing permits are being considered, domestic sheep would be managed in consideration of the Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats (IM No-98-140).	Desert bighorn sheep would be managed in all historic ranges and in all historic seasonal habitats. Domestic livestock (sheep and cattle) grazing would be eliminated in all desert bighorn sheep ranges and migration routes.	Same as Alternative A.	Conservation actions for desert bighorn sheep would emphasize the exclusion of discretionary use of public lands. Management would primarily be passive.	Same as Alternative A, except that no domestic sheep or goat grazing would be allowed within 9 miles of desert bighorn sheep habitat, except where topographic features or other barriers prevent physical contact.

2.0 ALTERNATIVES

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
High and low elevation habitat management would occur indirectly and on a small scale through wildfire emergency stabilization projects.	High and low elevation habitat management would occur directly from active large-scale restoration and indirectly through wildfire emergency stabilization projects.	Low elevation habitat management would occur directly from active large-scale restoration. High elevation habitats would not be managed for active restoration. Both high and low elevation habitats would be managed indirectly through wildfire emergency stabilization projects.	Passive management would be emphasized over active management. Active habitat restoration for desert bighorn sheep would be emphasized only in areas affected by wildfires or where invasive species dominate.	Same as Alternative B.
Parameter – Mojave Desert and Great Basin Desert Scrub and Salt Desert Shrub Habitats (see Section 2.5.7.8) Special Status Species Included in RMP U.S. Fish and Wildlife Service Section 7 Consultation				
Western burrowing owl No proactive actions or assessments occur. Western burrowing owl habitat would be managed as issues arise on a case-by-case basis.	Systematic breeding surveys would be conducted (in cooperation with the Nevada Department of Wildlife) and the data gathered in the surveys would be used in the watershed analysis process to make management decisions for western burrowing owl breeding locations and potential habitats.	Same as Alternative A.	Western burrowing owl habitats would be primarily managed passively, through the exclusion of discretionary uses of public lands.	Same as Alternative B.
Parameter – Great Basin (Sagebrush Obligate Habitat) (see Section 2.5.7.9) Special Status Species Included in RMP U.S. Fish and Wildlife Service Section 7 Consultation Sage grouse (see Management Common to All Alternatives) Pygmy rabbit (see Management Common to All Alternatives in Section 2.5.7.8)				
Greater sage-grouse would be considered an important BLM Sensitive Species and would be emphasized over other BLM Sensitive Species.	A balanced multiple species approach to greater sage-grouse management would be taken in which sage grouse needs would be balanced with the needs and priorities of all other BLM Sensitive Species.	Management of greater sage-grouse habitat would be similar to Alternative A, except that sagebrush habitat restoration would be emphasized in areas that have the greatest potential to provide additional livestock forage, while stabilizing sage grouse populations.	No BLM Sensitive Species goals would be of a higher profile or prioritized over other BLM Sensitive Species goals.	Same as Alternative B except sage grouse habitat needs would be utilized as a model for management in sagebrush communities. Sagebrush obligate BLM Sensitive Species would be considered in site specific analysis.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Sage grouse management actions would be implemented based on potential projects identified through large-scale habitat estimates performed through local sage grouse conservation plans.	Until more specific mid-scale sage grouse habitat assessments or watershed analyses are performed, initial sage grouse management actions would occur through confirmation and revision of the priority projects identified in local sage grouse conservation plans. Guidance provided in the BLM National Sage Grouse Habitat Conservation Strategy, would guide habitat management revisions to the Local Plans.	Restoration actions would focus on enlarging sagebrush habitat size in areas occupied by sage grouse and with potential for sage grouse in the future. Allowable use restrictions would be developed on a case-by-case basis.	Passive management would be emphasized over active management through the exclusion of all permitted commodity uses of public lands.	Same as Alternative B.
Priorities for assessing and monitoring sage grouse habitat conditions in sagebrush communities would be established and would occur periodically or as more data becomes available through the local sage grouse conservation plans. Long-term management actions for sage grouse would be implemented through future recommendations from local sage grouse planning teams or through actions identified through watershed analysis.	A coordinated and systematic mid-scale approach to assess District-wide sage grouse habitat conditions in sagebrush communities would be completed within 3 years. These sage grouse/sagebrush habitat assessments would be performed independently of watershed analysis schedules and timelines. Management actions for sage grouse would be implemented through the actions identified in mid-scale habitat assessments and watershed analysis.	Same as Alternative A.	Same as Alternative B, except the habitat assessment protocol would focus solely on performing inventories and identifying areas where direct human-induced alterations to the natural environment have altered the vegetation state.	Same as Alternative B.

2.0 ALTERNATIVES

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
There would be no established approach or prioritization to maintain quality sagebrush habitats. Sagebrush habitat maintenance would be performed in consideration of the priorities identified in the BLM National Sage Grouse Conservation Strategy.	Intact and quality sagebrush habitat would be maintained. Habitat maintenance actions from the BLM National Sage Grouse Conservation Strategy would be prioritized to: 1) Maintain large areas of high quality sagebrush which are currently occupied by sage grouse; 2) Maintain habitats which connect seasonal sagebrush habitats in occupied source habitats; and 3) Maintain habitats which connect seasonal sagebrush habitats in occupied isolated habitats.	Intact and quality sagebrush habitats would require no actions for maintenance.	Habitat maintenance would be limited to sagebrush habitats with adequate perennial understory or those habitats that are near the limits of the desired range of conditions. Sage grouse habitat maintenance would primarily be managed passively and indirectly through the exclusion of permitted commodity uses of all public lands.	Same as Alternative B.
Allowable sage grouse habitats uses would continue to be managed in consideration of best management practices, with blanket restrictions on surface disturbing activities and survey requirements as outlined in the Ely District Management Framework Plans and Activity Plans.	Allowable uses would be managed to maintain quality sage grouse habitats through implementation of best management practices and standard operating procedures in Appendix K. Livestock management would be adjusted to maintain quality habitats if, through mid-scale sage grouse habitat assessments in sagebrush communities or watershed analysis, livestock are determined to be a causal factors for non-attainment of standards.	Same as Alternative A.	No allowable use restrictions would be needed to maintain sage grouse habitats. Sage grouse habitat would be primarily managed passively and indirectly through the exclusion of permitted commodity uses of all public lands.	Same as Alternative B.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
<p>Sage grouse habitat restoration would occur at a small scale and through various projects identified in the local sage grouse conservation plans. Sagebrush restoration would be centered on restoring potential sagebrush habitats encroached by pinyon or juniper and in consideration of the restoration priorities identified in the BLM National Sage Grouse Conservation Strategy.</p>	<p>A proactive and large scale management approach would be implemented to restore lost, degraded, or fragmented sagebrush habitats and increase the range of conditions of sage grouse habitat to increase sage grouse populations. Habitat restoration actions from the BLM National Sage Grouse Conservation Strategy would be prioritized to: 1) Reconnect large patches of high quality seasonal habitats, which sage grouse currently occupy; 2) Enlarge sagebrush habitat in areas sage grouse currently occupy; 3) Re-connect stronghold/source habitats currently occupied by sage grouse with isolated habitats currently occupied by sage grouse; 4) Re-connect currently occupied and isolated habitats; 5) Restore potential sagebrush habitats that are currently not occupied by sage grouse.</p>	<p>Sagebrush habitat restoration would be emphasized in areas that have the greatest potential to provide additional livestock forage, while stabilizing sage grouse populations. Restoration actions would focus on enlarging sagebrush habitat size in areas occupied by sage grouse and with potential for sage grouse in the future.</p>	<p>Restoration of sagebrush habitats would be on a very small scale and would be prioritized in non native or invasive areas and/or areas burned by wildfire.</p>	<p>Same as Alternative B.</p>
<p>Allowable use restrictions would not exist for sagebrush habitats undergoing restoration. Livestock would be excluded from using post wildfire restorations for a minimum of 2 years.</p>	<p>Allowable use restrictions would be developed in sage grouse habitats undergoing restoration, on a case-by-case basis, as dictated by monitoring.</p>	<p>Same as Alternative B.</p>	<p>No allowable use restrictions would be needed. Sage grouse habitat would primarily be managed passively and indirectly through the exclusion of permitted commodity uses of all public lands.</p>	<p>Same as Alternative B.</p>

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Parameter – Great Basin Salt Desert Shrub Habitat (see Section 2.5.7.10)				
Special Status Species Included in RMP U.S. Fish and Wildlife Service Section 7 Consultation				
Sunnyside green gentian	A detailed monitoring and inventory plan would be developed to monitor both known and potential habitats of Sunnyside green gentian within 5 years of the Record of Decision.	Same as Alternative A.	Special status plants and their habitats would primarily be managed passively, through the exclusion of discretionary uses of public lands allowing natural processes and disturbance to occur.	Same as Alternative B.
WILD HORSES				
Goal – Maintain and manage healthy and genetically viable wild horses inside herd management areas within appropriate management levels to ensure a thriving natural ecological balance while preserving a multiple use relationship with other uses and resources.				
Parameter – Herd Management Area Establishment (see Section 2.5.8.1)				
Manage wild horses within 24 herd management areas covering approximately 5.36 million acres (see Map 2.4-1 and Map 2.4-2).	Manage wild horses within 6 herd management areas covering approximately 3.6 million acres (see Map 2.4-3).	Same as Alternative B.	Same as Alternative A except no population limits would be established within herd management areas.	Same as Alternative B.
Parameter – Population Management (see Section 2.5.8.2)				
Manage populations within existing appropriate management levels or ranges. Gather when necessary to approximately 40 percent below management level number to allow population growth before the next gather cycle.	Manage populations within ranges of appropriate management levels.	Same as Alternative B.	Do not limit or manage populations within herd management areas. Remove wild horses outside the herd management areas from public lands.	Same as Alternative B.
Parameter – Genetic Health/Viability (see Section 2.5.8.3)				
Manage wild horses within the 24 herd management areas regardless of habitat conditions.	Manage wild horses in herd management areas only where habitat conditions can support a long-term genetically viable population.	Same as Alternative B.	Same as Alternative A.	Same as Alternative B.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
CULTURAL RESOURCES				
Goal – Identify, protect, and classify at-risk archaeological resources, significant historic properties, and cultural landscapes.				
Parameter – Cultural Resource Use Allocation – Historic roads, trails, railways, highways, and associated sidings and stations (see Section 2.5.9.1)				
Manage for future Cultural Resource Use Allocations. No fee sites would be established.	Allocate and manage 100% of the National Register eligible resources for Scientific, Conservation, and Public Use. No fee sites would be established.	Same as Alternative B. Establish fee sites for all properties allocated and managed for Public Use.	Allocate and manage 100% of the National Register eligible resources for Conservation Use. No fee sites would be established.	Same as Alternative B except establish fee sites at Public Use sites as appropriate.
Parameter – Cultural Resource Use Allocation – Rock Art Sites (see Section 2.5.9.2)				
Manage for future Cultural Resource Use Allocations. No established fee sites.	Allocate and manage 100% of the National Register eligible rock art sites for Scientific, Conservation, and Public Use. No fee sites would be established.	Allocate and manage 100% of the National Register eligible rock art sites for conservation and Public Use. National Register eligible rock art sites managed for Public Use would be established as fee sites. Native Americans would be exempt from fees only when visiting rock art sites for religious practices.	Allocate and manage 100% of the National Register eligible rock art sites with evidence of existing public use to Public Use. The remainder of the National Register eligible rock art sites, with no evidence of public use, would be allocated and managed for Scientific or Conservation Use. No fee sites would be established.	Same as Alternative B except fee sites would be established at Public Use rock art sites as appropriate. Native Americans would be exempt from fees only when visiting rock art sites for religious practices.
Parameter – Cultural Resource Use Allocation – Historic Townsites, Historic Mining Camps, Historic Mining Districts, and related Historic Buildings & Historic Standing Structures, and Historic Racetracks (see Section 2.5.9.3)				
Manage for future Cultural Resource Use Allocations. No established fee sites.	Allocate and manage 100% of the National Register eligible sites with evidence of unauthorized excavation, for Conservation and/or Scientific Use in order to perform data recovery where future protection is not feasible.	Allocate and manage 100% of the National Register eligible sites with standing structures or evidence of vandalism to Public Use. Allocate and manage all other National Register eligible sites for Scientific and/or Conservation Use.	Allocate and manage 100% of the National Register eligible sites for Conservation Use. No fee sites would be established.	Same as Alternative B.

2.0 ALTERNATIVES

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
	Allocate and manage 100% of the National Register eligible sites with standing structures for Conservation Use. No fee sites would be established.	Fee sites would be established at Public Use sites as appropriate.		Allocate and manage 100% of the National Register eligible sites with standing structures for Conservation and/or Public Use. Fee sites would be established at Public Use sites as appropriate.
Parameter – Cultural Resource Manage for future Cultural Resource Use Allocations. No established fee sites.	Use Allocation – Historic Cemeteries and Isolated Historic Gravesites (see Section 2.5.9.4) Allocate and manage 100% of the sites for Conservation Use. No fee sites would be established.	Allocate and manage 100% of the sites for Public Use. Fee sites would be established at Public Use sites as appropriate.	Same as Alternative B. No fee sites would be established.	Allocate and manage 100% of the sites for Conservation and/or Public Use. Fee sites would be established at Public Use sites as appropriate.
Parameter – Cultural Resource Manage for future Cultural Resource Use Allocations.	Use Allocation – Ethnic Arboreal Narratives and Graphics and Bow Stave Trees (see Section 2.5.9.5) Allocate and manage 100% of the National Register eligible sites for Scientific Use while promoting public access.	Same as Alternative B.	Allocate and manage 100% of the National Register eligible sites for Conservation Use.	Same as Alternative B.
Parameter – Cultural Resource Manage for future Cultural Resource Use Allocations.	Use Allocation – Paleo-Indian Sites (see Section 2.5.9.6) Allocate and manage 100% of the National Register eligible sites for Scientific and/or Conservation Use.	Same as Alternative B.	Allocate and manage 100% of the National Register eligible sites for Conservation Use.	Same as Alternative B.
Parameter – Cultural Resource Manage for future Cultural Resource Use Allocations. No established fee sites.	Use Allocation – Formative Puebloan Sites (see Section 2.5.9.7) Allocate and manage 100% of the National Register eligible sites for Conservation and Scientific Use while maintaining existing Public Use sites. Fee sites would be established at Public Use sites as appropriate.	Allocate and manage 100% of the National Register eligible sites for Scientific, Conservation, and Public Use. Allocate no more than one site per watershed to Public Use. Fee sites would be established at Public Use sites as appropriate.	Same as Alternative B except no fee sites would be established.	Same as Alternative B. Fee sites would be established at Public Use sites as appropriate.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Parameter – Cultural Resource Use Allocation – Rockshelter and Cave Sites (see Section 2.5.9.8)				
Manage for future Cultural Resource Use Allocations. No established fee sites.	Allocate and manage 100% of the National Register eligible sites for Conservation and Scientific Use while maintaining existing Public Use sites. No fee sites would be established.	Allocate and manage 100% of the National Register eligible sites to Conservation, Scientific, and Public Use. No more than one fee site per watershed would be established for sites managed for Public Use.	Allocate and manage 100% of the National Register eligible sites for Conservation Use while maintaining existing Public Use sites. No fee sites would be established.	Same as Alternative B except fee sites would be established at Public Use sites as appropriate.
Parameter – Cultural Resource Use Allocation – Prehistoric Complex Sites, Campsites, or Specialized Activity Areas (see Section 2.5.9.9)				
Manage for future Cultural Resource Use Allocations.	Allocate and manage 90% of the National Register eligible sites to Scientific and Conservation Use. Allocate and manage up to 10% of the National Register eligible sites per watershed to Experimental Use.	Allocate and manage 70% of the National Register eligible sites to Scientific and Conservation Use. Allocate and manage up to 30% of the National Register eligible sites per watershed to Experimental Use.	Allocate and manage 100% of the National Register eligible sites to Scientific and Conservation Use.	Same as Alternative B.
Parameter – Cultural Resource Use Allocation – Toolstone Sources or Quarries (see Section 2.5.9.10)				
Manage for future Cultural Resource Use Allocations.	Allocate and manage 100% of the National Register eligible obsidian toolstone sources/quarries to Scientific and Conservation Use. Allocate and manage 90% of all other National Register eligible material sources/quarries to Scientific and Conservation Use. Allocate and manage up to 10% of all other National Register eligible material sources/quarries to Experimental Use.	Allocate and manage 100% of the National Register eligible obsidian toolstone sources/quarries to Scientific and Conservation Use. Allocate and manage 70% of all other National Register eligible material sources/quarries to Scientific and Conservation Use. Allocate and manage up to 30% of all other National Register eligible material sources/quarries to Experimental Use.	Allocate and manage 100% of the National Register eligible toolstone sources/quarries to Conservation and Scientific Use.	Same as Alternative B.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Parameter – Cultural Resource Use Allocation – Historic Ranching and Livestock related Historic Sites, Buildings, Standing Structures, and Landscapes (see Section 2.5.9.11)				
Manage for future Cultural Resource Use Allocations.	Allocate and manage one site per watershed for Public Use.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
	Allocate and manage 100% of the National Register eligible sites for Scientific Use.		Allocate and manage 100% of the National Register eligible sites for Conservation Use.	
Parameter – Cultural Resource Use Allocation – Ethnohistoric Sites (see Section 2.5.9.12)				
Manage for future Cultural Resource Use Allocations.	Allocate and manage 100% of the National Register eligible sites for Conservation Use.	Same as Alternative B.	Same as Alternative B.	Same as Alternative B.
Parameter – Cultural Resource Use Allocation – “Other” Sites (see Section 2.5.9.13)				
Manage for future Cultural Resource Use Allocations.	Allocate and manage 100% of the National Register eligible sites for Scientific and Conservation Use with public use being monitored. Allocate and manage 100% of the agave roasting pits for Scientific, Conservation, and Public Use.	Same as Alternative B.	Allocate and manage 100% of the National Register eligible sites for Conservation Use with public use being monitored.	Same as Alternative B.
PALEONTOLOGICAL RESOURCES				
Goal – Identify and manage at-risk paleontological resources (scientific value); preserve and protect vertebrate fossils through best science methods; and promote public and scientific use of invertebrate and paleobotanical fossils.				
Parameter – Trilobite Collecting (see Section 2.5.10)				
No registration system in place for trilobite collecting.	Establish a no-fee-based registration system.	Establish a fee-based registration system.	Close trilobite locations to collecting.	Same as Alternative B.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
VISUAL RESOURCES				
Goal – Manage public land actions and activities consistent with District visual resource management class objectives.				
Parameter – Visual Resource Management - See Section 2.5.11				
Manage visual resources in accordance with the following Visual Resource Management Classes (see Map 2.4-4).	Manage visual resources in accordance with the following Visual Resource Management Classes (see Map 2.4-5).	Manage visual resources in accordance with the following Visual Resource Management Classes (see Map 2.4-6).	Manage visual resources in accordance with the following Visual Resource Management Classes (see Map 2.4-7).	Same as Alternative B.
Class I: 1,092,388 acres Class II: 326,240 acres Class III: 723,710 acres Class IV: 5,610,161 acres No Visual Resource Management Class: 3,633,497 acres	Class I: 1,072,261 acres Class II: 2,515,215 acres Class III: 4,960,002 acres Class IV: 2,838,518 acres	Class I: 1,072,585 acres Class II: 2,358,882 acres Class III: 4,867,538 acres Class IV: 3,086,991 acres	Class I: 1,061,448 acres Class II: 10,324,548 acres Class III: 0 acres Class IV: 0 acres	
LANDS AND REALTY				
Goal – Manage public lands in a manner that allows the retention of public land with high resource values and consolidates public land patterns to ensure effective administration and improve resource management. Make available for disposal public lands that promote community development. Meet public needs for use authorizations such as rights-of-way, permits, leases, and easements while avoiding or minimizing adverse impacts to other resource values. Utilize withdrawal actions with the least restrictive measures and minimum size necessary to accomplish the desired purpose.				
Parameter – Retention of Public Lands (see Section 2.5.12.1)				
Retain big game habitat, upland game habitat, and/or wild horse herd management areas.	Retain public land or interest in lands that would contribute to the restoration and health of the land within the District.	Same as Alternative B.	No net loss of public lands in the planning area.	Same as Alternative B.
Parameter – Disposal of Public Lands (see Section 2.5.12.2)				
Dispose of lands, identified for disposal case-by-case, under existing authorizations. Dispose of lands outside designated big game and upland game habitat, and/or wild horse herd management areas on a case-by-case basis (see Maps 2.4-8, 2.4-9, and 2.4-10).	Dispose of lands only in identified areas. No disposal of critical habitat for threatened and endangered species, and sensitive species (see Maps 2.4-11, 2.4-12, and 2.4-13).	Land disposal would be balanced with restoration while emphasizing commercial and economic development (see Maps 2.4-14, 2.4-15, and 2.4-16).	No net loss of public lands in the planning area (see Maps 2.4-17, 2.4-18, and 2.4-19).	Dispose of lands in identified areas (see Maps 2.4-12, 2.4-20, and 2.4-21).

2.0 ALTERNATIVES

Table 2.4-1 (Continued)

Alternative A	Alternative B (see Section 2.5.12.3)	Alternative C	Alternative D	Alternative E
Parameter – Acquisitions Acquire land on a case-by-case basis. Encourage local governments and private individuals to acquire options on or enter into non-binding agreements to purchase environmentally sensitive private lands or rights to wilderness study areas or designated wilderness that could potentially be exchanged for public lands outside of ACECs.	Same as Alternative A.	Same as Alternative A.	Legislative disposals would be implemented as mandated, but administrative disposals could not occur until sufficient "replacement lands" would be acquired to achieve no net loss.	Same as Alternative A.
Parameter – Withdrawal of Public Land (see Section 2.5.12.4)				
Consider requests for new withdrawals, withdrawal relinquishments, or modifications on a case-by-case basis.	All Entry: Withdraw from surface and mineral entry, lands with sensitive or high resource values. Consider requests by other federal agencies for new withdrawals, withdrawal relinquishments, or modifications on a case-by-case basis.	No new withdrawals would be designated.	Consider requests by other federal agencies for new withdrawals, withdrawal relinquishments, or modifications on a case-by-case basis.	Same as Alternative B.
Mineral Entry Only: Withdraw 14,770 acres of land identified for potential disposal.	Mineral Entry Only: Withdraw from mineral entry, 64,156 acres of land identified for potential disposal.	Mineral Entry Only: Withdraw from mineral entry, 200,243 acres of land identified for potential disposal.	Mineral Entry Only: Withdraw 12,790 acres of land identified for potential disposal.	Mineral Entry Only: Withdraw 71,999 acres of land identified for potential disposal.
Parameter – Corridor Designations (see Section 2.5.12.5)				
No additional corridors would be designated.	Designated corridors would be 0.5 mile in width.	Designated corridors would be 3 miles in width.	There would be no designation of additional corridors.	Same as Alternative B.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
No additional corridors would be designated.	A corridor 0.5 mile wide would be designated in Spring Valley, White Pine County (see Map 2.4-22).	A new corridor 3 miles wide would be designated in Spring Valley, White Pine County (see Map 2.4-23).	There would be no designation of additional corridors.	Same as Alternative B.
Parameter – Communication Sites (see Section 2.5.12.6)				
Authorize new communication sites on a case-by-case basis.	Create new communication sites after existing sites are at maximum capacity.	Provide communication site locations that support community and economic development.	Establish specific limited communication site areas based on minimal impacts to public lands.	Communication site locations would support community and economic development - emphasis on co-location of sites.
Parameter – Land Use Authorizations (Rights-of-way, Permits, Leases, and Easements) (see Section 2.5.12.7)				
Issue land use authorizations on a case-by-case basis.	Where feasible, locate and consolidate new land use authorizations within or adjacent to existing authorizations. ACECs would be avoidance or exclusion areas.	Process land use authorizations to facilitate community and economic development. ACECs would be avoidance or exclusion areas.	No new land use authorizations.	Issue land use authorizations on a case-by-case basis.
RENEWABLE ENERGY				
Goal – Provide opportunities for development of renewable energy sources such as wind, solar, biomass, and other alternative energy sources while minimizing adverse impacts to other resources such as wildlife and visual resources.				
Parameter – Wind and Solar Energy (see Section 2.5.13.1)				
No areas would be designated as potential wind energy development areas.	Approximately 201,400 acres would be designated as potential wind energy development areas (see Map 2.4-24). Applications for renewable energy development would be accepted for areas outside the identified areas as well.	Approximately 202,600 acres would be designated as potential wind energy development areas (see Map 2.4-25). Applications for renewable energy development would be accepted for areas outside the identified areas as well.	Same as Alternative A.	Same as Alternative C.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
No areas would be designated as potential solar energy development areas.	Approximately 6,767,800 acres would be designated as potential solar energy development areas (see Map 2.4-26). Applications for renewable energy development would be accepted for areas outside the identified areas as well.	Approximately 6,766,900 acres would be designated as potential solar energy development areas (see Map 2.4-27). Applications for renewable energy development would be accepted for areas outside the identified areas as well.	Same as Alternative A.	Approximately 6,769,600 acres would be designated as potential solar energy development areas (see Map 2.4-28). Applications for renewable energy development would be accepted for areas outside the identified areas as well.
TRAVEL MANAGEMENT AND OFF-HIGHWAY VEHICLE USE				
Goal – Provide and maintain suitable access to public lands. Manage off-highway vehicle use to protect resource values, promote public safety, provide off-highway vehicle opportunities where appropriate, and minimize conflict.				
Parameter – Transportation Plan (see Section 2.5.14.1)				
Outside desert tortoise habitat, road and trail designation would be on a case-by-case basis.	All motorized vehicle traffic would be limited to designated roads and trails. Wilderness Study Areas would be closed to motorized traffic. Designate roads and trails to emphasize landscape restoration.	Designate roads and trails to emphasize specific administrative needs, recreation opportunities, and tourism.	All motorized vehicle travel would be limited to designated roads and trails. Road and trail designations would be limited to mechanically maintained roads.	Road and trail designations would emphasize specific administrative needs, recreation, and tourism. Limit all vehicular traffic to designated roads and trails, exceptions apply.
Parameter – Off-highway Vehicles (see Section 2.5.14.2)				
Manage off-highway vehicles in accordance with the following designations (see Map 2.4-29).	Manage off-highway vehicles in accordance with the following designations (see Map 2.4-30).	Manage off-highway vehicles in accordance with the following designations (see Map 2.4-31).	Off-highway vehicles would be limited to maintained roads and trails (see Map 2.4-32 for District transportation map).	Same as Alternative B.
9,836,000 acres – open to cross-country off-highway vehicle use	0 acres – open to cross-country off-highway vehicle use.	32,000 acres – open to cross-country off-highway vehicle use (dry lake beds).	0 acres – open to cross-country off-highway vehicle use.	Same as Alternative B.
804,000 acres – limited to designated roads and trails (Wilderness Study Areas and the Desert Tortoise Amendment Area).	10,338,000 acres – limited to designated roads and trails.	10,608,000 acres – limited to designated roads and trails.	Approximately 400,000 acres – limited to designated roads and trails.	Same as Alternative B.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
760,000 acres – closed to off-highway vehicle use.	1,062,000 acres – closed to off-highway vehicle use (designated wilderness and Wilderness Study Areas).	760,000 acres – closed to off-highway vehicle use.	11,000,000 acres – closed to off-highway vehicle use.	Same as Alternative B.
RECREATION				
Goal – Provide quality settings for developed and undeveloped recreation experiences and opportunities while protecting resources.				
Parameter – Special Recreation Management Areas (see Section 2.5.15.1)				
Manage an estimated 750,000 acres as one Special Recreation Management Area.	Manage 2,680,000 acres as nine Special Recreation Management Areas (see Map 2.4-33).	Manage 3,310,000 acres as nine Special Recreation Management Areas (see Map 2.4-35).	No Special Recreation Management Areas would be managed and existing developed sites would be eliminated.	Same as Alternative B.
Emphasis would be on maintaining existing developed facilities.	Emphasis would be to promote recreation across a wide spectrum of opportunities, both developed and undeveloped.	Emphasis would be focused on additional developed recreation sites.	There would be no Special Recreation Management Areas.	Same as Alternative B.
Parameter – Special Recreation Permits (see Section 2.5.15.2)				
No limitations on outfitter and guide permits for hunting.	Issue outfitter and guide permits for hunting through a competitive bid process with no limits on the number of permits offered.	Same as Alternative A.	No outfitter and guide permits for hunting would be issued.	Limit outfitter and guide permits for the first 3 years following plan implementation to parties who have had a permit for the previous 3 years. Monitor use for 3 years to establish permit numbers for geographic areas. After the monitoring period, issue permits by an open competitive bid process, limiting the number of sub-guides that could operate.
No recreation management areas with an emphasis of off-highway vehicle use of designated roads and trails.	Recreation management on approximately 310,000 acres would emphasize off-highway vehicle use of designated roads and trails (see Map 2.4-34).	Recreation management on approximately 734,000 acres would emphasize off-highway vehicle use of designated roads and trails (see Map 2.4-36).	Same as Alternative A.	Same as Alternative C.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Limit motorcycle events to twelve races on routes subject to NEPA analysis.	Establish two special recreation permit areas totaling approximately 656,000 acres to maximize opportunities for motorcycle special recreation permit events (see Map 2.4-37).	Establish four special recreation permit areas totaling approximately 1.36 million acres to maximize opportunities for motorcycle special recreation permit events (see Map 2.4-38).	No motorcycle events would be permitted.	Same as Alternative C.
A maximum of two truck events would be permitted each year on race routes subject to NEPA analysis.	Same as Alternative A.	A maximum of eight truck events would be permitted each year on twelve routes established for all truck events.	No truck events would be permitted.	A maximum of two truck events would be permitted each year on four routes established for all truck events.
LIVESTOCK GRAZING				
Goal – Manage the public lands to provide for a level of livestock grazing consistent with multiple use, sustained yield, and watershed function and health.				
Parameter – Lands Available for Livestock Grazing (see Section 2.5.16.1)				
Approximately 11,174,000 acres would be available for livestock grazing subject to modification associated with disposal actions (see Maps 2.4-39 and 2.4-40).	Approximately 7,568,000 acres would be available for livestock grazing consistent with maintaining and restoring watershed function and health subject to modification associated with disposal actions.	Approximately 11,164,000 acres would be available for livestock grazing subject to modification associated with disposal actions. The Tamberlaine Allotment would be used as forage reserves if the permit is relinquished.	Eliminate livestock grazing throughout the district.	Approximately 11,171,000 acres would be available for livestock grazing consistent with maintaining function and health and subject to modification associated with disposal actions. Future modifications could also occur based upon monitoring of tortoise habitat.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
No additional acres are identified for livestock closure based on resource reasons.	The remaining 542,100 acres of tortoise habitat within the district would be closed to livestock grazing. In addition, 3,038,100 acres of desert bighorn and Rocky Mountain bighorn sheep ranges and migration routes and 25,700 acres in newly designated ACECs would be closed (see Map 2.4-40).	Approximately 9,600 acres in newly designated ACECs would be closed to livestock grazing.		No domestic sheep or goat grazing would be allowed within 9 miles of desert bighorn sheep habitat, except where topographic features or other barriers prevent physical contact. Approximately 3,300 acres in newly designated ACECs would be closed to livestock grazing (see Map 2.4-41).
Continue to manage the Haypress Allotment (7,843 acres) as a livestock grazing allotment. The area would not be managed as a horse preserve and would not be identified for potential disposal.	Same as Alternative A.	Manage the 7,843 acres currently in the Haypress Allotment as a horse preserve in partnership with the National Mustang Association, or some other entity. Close the allotment to livestock grazing. Identify the 7,843 acres for potential disposal.	No livestock grazing.	Same as Alternative C.
Parameter – Permit Administration (see Section 2.5.16.2)				
Authorized active use fluctuates above and below the total active use or level of use authorized in the grazing permit. Authorized active use above the total active use is temporary nonrenewable. Active use not activated is nonuse.	Authorized use would not exceed the total active use or level of use authorized in the grazing permit.	Authorized use could exceed the total active use or level of use authorized in the grazing permit based on performance-based grazing.	No livestock grazing.	Actual use would fluctuate above and below the total active use or level of use authorized in the grazing permit. Authorize performance-based grazing on a case-by-case basis.
Parameter – Kind of Livestock (see Section 2.5.16.3)				
Conversions from cattle to sheep; or sheep to cattle, horse or goat, are authorized based on forage type, topography, and available water.	Authorize changes in kind of livestock based on achievement of standards for rangeland health or other multiple use objectives through watershed analysis.	Same as Alternative B.	No livestock grazing.	Same as Alternative B.

2.0 ALTERNATIVES

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Parameter – Livestock Management in Bighorn Sheep Ranges (see Section 2.5.16.4)				
Domestic sheep would continue to be managed in consideration of the Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats (IM No-98-140) when proposed changes to BLM grazing permits are being considered.	Domestic livestock (sheep and cattle) grazing would be eliminated in all Rocky Mountain bighorn sheep ranges and migration routes (see Map 2.4-40).	Same as Alternative A.	No livestock grazing.	Same as Alternative A.
Domestic sheep would continue to be managed in consideration of the Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats (IM No-98-140) when proposed changes to BLM grazing permits are being considered.	Domestic livestock (sheep and cattle) grazing would be eliminated in all desert bighorn sheep ranges and migration routes.	Same as Alternative A.	No livestock grazing.	No domestic sheep or goat grazing would be allowed within 9 miles of desert bighorn sheep habitat, except where topographic features or other barriers prevent physical contact (see Map 2.4-41).
Parameter – Non-use Relinquished Permits (see Section 2.5.16.5)				
Allow for application of relinquished grazing permits.	Allow for flexibility in the management of relinquished permits to facilitate achievement of watershed goals and rangeland health standards. Manage the Tamberlaine Allotment for wildlife if the permit is relinquished.	Allow for flexibility in the management of relinquished permits to create forage reserves for research and/or temporary use by permittees who are displaced for any reason. Manage the Tamberlaine Allotment as a forage reserve if the permit is relinquished.	No livestock grazing.	Same as Alternative C.
Parameter – Temporary Nonrenewable (see Section 2.5.16.6)				
Authorize temporary nonrenewable grazing use on a case-by-case basis.	Authorize no temporary nonrenewable grazing use.	Same as Alternative A.	No livestock grazing.	Same as Alternative A.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Parameter – Water Hauling (see Section 2.5.16.7)				
Authorize water hauling to improve livestock distribution.	Authorize water hauling to achieve rangeland health standards on a watershed basis.	Same as Alternative A.	No livestock grazing.	Same as Alternative B.
WOODLAND AND NATIVE PLANT PRODUCTS				
Goal – Provide opportunities for traditional and non-traditional uses of vegetation products on a sustainable, multiple-use basis.				
Parameter – Fuelwood Collection (see Section 2.5.17.1)				
Allow collection of fuelwood for personal and commercial use District-wide except in closed areas.	Allow fuelwood collection for personal and commercial use in designated areas only; harvesting of live trees allowed on a case-by-case basis in designated areas.	Same as Alternative A. No restrictions on harvesting live trees.	No fuelwood collection.	Same as Alternative A except the collection of other tree species could be designated.
Parameter – Pinyon Pine Nut Harvesting (see Section 2.5.17.2)				
Free personal use of up to 25 pounds District-wide. Commercial use is allowed in designated areas to the highest bidder.	Same as Alternative A except prior to designating areas for commercial use, consultation with American Indian tribes would occur. American Indians would not be subject to the 25-pound personal use limitation.	Same as Alternative A.	Only personal use, including American Indians, would be allowed. No commercial use.	Same as Alternative B.
Parameter – Christmas Tree Harvesting (see Section 2.5.17.3)				
Pinyon and juniper are available for personal and commercial use District-wide.	Pinyon, juniper, and white fir would be available for personal use District-wide. Only pinyon and juniper would be available for commercial use District-wide. White fir could be available for commercial use in some areas.	Pinyon, juniper, spruce, and white fir would be available for personal and commercial use District-wide.	No Christmas tree harvesting allowed.	Same as Alternative B.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Parameter – Post and Pole Harvesting (see Section 2.5.17.4)				
Pinyon and juniper are available for personal and commercial use in non-restricted areas District-wide. Commercial harvest locations would be designated at the time of sale.	Pinyon and juniper would be available for personal and commercial use District-wide except in restricted areas. Use of aspen, fir, and spruce would be allowed on a case-by-case basis.	Pinyon, juniper, aspen, fir, and spruce would be available for personal and commercial use District-wide.	No post and pole harvest allowed.	Same as Alternative B.
Parameter – Seed Collection (see Section 2.5.17.5)				
Commercial use (hand collection and limited mechanical collection) allowed on a case-by-case basis.	Commercial use (hand collection and limited mechanical collection) allowed except in restoration areas.	Same as Alternative B. Hand and mechanical collection methods would be allowed.	No commercial use allowed. Hand collection allowed for personal use.	Commercial use (hand collection and limited mechanical collection) allowed except in restoration areas.
Parameter – Cactus and Yucca Collection (see Section 2.5.17.6)				
Personal use allowed on a case-by-case basis, primarily associated with salvage operations.	Same as Alternative A.	Personal and commercial use allowed District-wide.	Collection not allowed.	Personal and commercial use allowed on a case-by-case basis.
Parameter – Other Vegetation Product Collection (e.g., wildings, boughs, etc.) (see Section 2.5.17.7)				
Personal and commercial use allowed on a case-by-case basis.	Same as Alternative A.	Commercial use allowed District-wide.	Collection not allowed.	Same as Alternative A.
GEOLOGY AND MINERAL EXTRACTION				
Goal – Allow for meeting the Nation's energy needs while providing environmentally responsible production of fluid leasable minerals, and geophysical exploration for energy resources on Public Lands. Allow development of solid leasable and locatable minerals in a manner to prevent undue and unnecessary degradation. Allow development of saleable minerals in a manner that would prevent undue and unnecessary degradation, meet public demand, and minimize adverse impacts to other resource values.				
Parameter – Fluid Leasable Minerals (see Section 2.5.18.1)				
7,752,700 acres – open to leasing.	1,117,600 acres – open to leasing.	4,051,100 acres – open to leasing.	0 acres – open to leasing.	1,117,700 acres – open to leasing.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
0 acres – open to leasing, subject to programmatic stipulations.	8,552,400 acres – open to leasing, subject to programmatic stipulations for sage grouse, ferruginous hawk, big horn sheep, and cultural resources. For wildlife stipulations, BLM would determine on a site specific basis whether or not stipulations would apply. Company provides for site specific survey if required. Large areas subject to potential stipulations.	228,000 acres – open to leasing, subject to programmatic cultural stipulations. (An additional 411,330 acres of programmatic cultural resources overlap other resource surface use and timing restrictions.)	0 acres – open to leasing, subject to programmatic stipulations.	8,581,100 acres – open to leasing, subject to programmatic stipulations for sage grouse, ferruginous hawk, big horn sheep, and cultural resources. For wildlife stipulations, BLM would determine on a site specific basis whether or not stipulations would apply. Company provides for site specific survey if required. Large areas subject to potential stipulations.
2,291,700 acres – open to leasing subject to minor constraints. Traditional specific area timing and surface use stipulations would apply.	446,000 acres – open to leasing subject to minor constraints. Traditional specific area timing and surface use stipulations (desert tortoise habitat) would apply.	5,629,900 acres – open to leasing, subject to minor constraints. Traditional specific area surface use and timing restrictions would apply unless lessee applies to BLM for exception. More defined areas subject to stipulations.	0 acres – open to leasing, subject to minor constraints.	448,300 acres – open to leasing subject to minor constraints. Traditional specific area timing and surface use stipulations (desert tortoise habitat) would apply.
231,200 acres – open to leasing subject to major constraints (No Surface Occupancy).	36,100 acres – open to leasing subject to major constraints (No Surface Occupancy).	56,600 acres – open to leasing subject to major constraints (No Surface Occupancy).	0 acres – open to leasing subject to major constraints (No Surface Occupancy).	40,000 acres – open to leasing subject to major constraints (No Surface Occupancy).
1,124,400 acres – closed to leasing (see Map 2.4-42).	1,247,900 acres – closed to leasing (see Map 2.4-43).	1,434,400 acres – closed to leasing (see Map 2.4-44).	11,400,000 acres – closed to leasing.	1,212,900 acres – closed to leasing (see Map 2.4-45).

2.0 ALTERNATIVES

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Evaluate oil and gas geophysical exploration on a case-by-case basis	No geophysical exploration in areas closed to leasing or with No Surface Occupancy.	Consider geophysical exploration in areas closed to leasing or with No Surface Occupancy and/or timing restrictions, based on impacts identified in site specific analysis.	Seismic and geophysical exploration activities would only be allowed in non sensitive areas.	Same as Alternative B.
Parameter – Solid Leasable Minerals (see Section 2.5.18.2)				
10,263,400 acres – open to solid mineral leasing.	10,121,000 acres – open to solid mineral leasing.	9,914,000 acres – open to solid mineral leasing.	0 acres – open to solid mineral leasing.	10,165,600 acres – open to solid mineral leasing.
1,136,600 acres – closed to mineral entry.	1,279,000 acres – closed to solid mineral leasing.	1,486,000 acres – closed to solid mineral leasing.	11,400,000 acres – closed to solid mineral leasing.	1,234,400 acres – closed to solid mineral leasing (see Map 2.4-49).
See Map 2.4-46.	See Map 2.4-47.	See Map 2.4-48.		
Parameter – Locatable Minerals (see Section 2.5.18.3)				
10,265,400 acres – open to locatable mineral entry.	10,121,000 acres – open to locatable mineral entry.	9,914,000 acres – open to locatable mineral entry.	4,189,000 acres – open to locatable mineral entry.	10,165,600 acres – open to locatable mineral entry.
1,136,600 acres – proposed for withdrawal from locatable mineral entry.	1,279,000 acres – proposed for withdrawal from locatable mineral entry.	1,486,000 acres – proposed for withdrawal from locatable mineral entry.	7,211,000 acres – proposed for withdrawal from locatable mineral entry.	1,234,400 acres – proposed for withdrawal from locatable mineral entry.
See Map 2.4-46.	See Map 2.4-47.	See Map 2.4-48.	See Map 2.4-50.	See Map 2.4-49.
Parameter – Saleable Mineral (see Section 2.5.18.4)				
10,036,300 acres – open for mineral materials disposal subject to discretionary closures in resource sensitive areas.	9,564,300 acres – open for mineral materials disposal subject to discretionary closures in resource sensitive areas.	9,375,600 acres – open for mineral materials disposal subject to discretionary closures in resource sensitive areas.	0 acres – open to mineral material disposal subject to discretionary closures in resource sensitive areas.	9,608,400 acres – open to mineral material disposal subject to discretionary closures in resource sensitive areas.
1,363,700 acres – closed to mineral material disposal.	1,835,700 acres – closed to mineral material disposal.	2,024,400 acres – closed to mineral material disposal.	11,400,000 acres – closed to mineral material disposal.	1,791,600 acres – closed to mineral material disposal (see Map 2.4-54).
See Map 2.4-51.	See Map 2.4-52.	See Map 2.4-53.		

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Saleable mineral pit spacing varies within the District.	No saleable mineral pits within 5 miles of each other.	Saleable mineral pits would be appropriately spaced as determined by the authorized officer.	Sales would be allowed only from existing pits.	Same as Alternative B
WATERSHED MANAGEMENT				
Goal – Manage watersheds to restore and maintain resistance and resiliency to disturbances.				
Parameter – Allocation of Additional Forage as a Result of Restoration Actions (see Section 2.5.19.1)				
Allocate additional forage to livestock and wild horses (70 percent) and reserve for wildlife in Schell Resource Area (30 percent). Allocate additional forage proportionately among all users in remainder of the District.	Allocate additional forage for watershed maintenance and wildlife after Standards for Rangeland Health have been met at the watershed level.	Allocate additional forage for livestock after Standards for Rangeland Health have been met at the watershed level.	After Standards for Rangeland Health have been met at the watershed level, allocate additional forage for watershed maintenance, wildlife, and wild horses within herd management areas and reserve for watershed maintenance and wildlife outside herd management areas.	After Standards for Rangeland Health have been met at the watershed level, use a balanced approach to allocate additional forage for watershed maintenance, wildlife, livestock, and wild horses.
FIRE MANAGEMENT				
Goal – Provide an appropriate management response to all wildland fires, with emphasis on firefighter and public safety, consistent with overall management objectives.				
Parameter – Fire Management (see Section 2.5.20.1)				
Implement the current fire management plan.	Develop fire management plans to ensure fire use is implemented to the greatest extent possible following watershed analysis and native vegetation resilience to fire has been improved.	Suppress all wildland fires. Use prescribed fire in limited situations as a management tool for vegetation restoration.	Develop a new fire management plan with emphasis on no suppression of wildland fires unless they are human-caused or threaten life and/or property.	Same as Alternative B.
INVASIVE AND NONNATIVE PLANT SPECIES, INCLUDING NOXIOUS WEEDS				
Goal – Prevent the introduction and spread of noxious and invasive weeds. Control or eradicate existing populations.				
Parameter – Invasive and Nonnative Plant Species Management (see Section 2.5.21.1)				
Integrated pest management would be used to treat weed infestations.	Same as Alternative A.	Same as Alternative A.	Same as Alternative A except herbicide restrictions apply.	Same as Alternative A.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
SPECIAL DESIGNATIONS				
Goal – Evaluate areas of interest for special designation and appropriately manage those areas that meet necessary requirements.				
Parameter – Areas of Critical Environmental Concern (see Section 2.5.22.1)				
Retain the three current ACECs, totaling 212,500 acres (see Map 2.4-55 and Appendix Q).	Retain the three current ACECs, totaling 212,500 acres. Designate 18 new ACECs totaling 147,400 acres (see Map 2.4-55 and Appendix Q).	Retain the three current ACECs, totaling 212,500 acres. Designate 20 new ACECs totaling 142,800 acres (see Map 2.4-55 and Appendix Q).	Designate no new ACECs and remove ACEC designation from the three existing ACECs.	Retain the three current ACECs, totaling 212,500 acres. Designate 18 new ACECs totaling 138,900 acres (see Map 2.4-55 and Appendix Q).
Parameter – Back Country Byways (see Section 2.5.22.2)				
Designate no additional Back Country Byways (see Map 2.4-56).	Designate the Silver State Trail Back Country Byway (see Map 2.4-57).	Designate the Rainbow Canyon and Silver State Trail Back Country Byways (see Map 2.4-58).	Same as Alternative A.	Same as Alternative C.
Parameter – Wilderness Study Areas (see Section 2.5.22.3)				
Only those designated Wilderness Study Areas are managed to preserve wilderness characteristics.	Emphasize other multiple uses and apply management restrictions to reduce impacts to some or all of the wilderness characteristics outside of designated wilderness or Wilderness Study Areas.	Emphasize other multiple uses as a priority over protecting wilderness characteristics outside of designated wilderness or Wilderness Study Areas.	Emphasize the protection of some, or all, of the wilderness characteristics outside of designated wilderness or Wilderness Study Areas through means other than designating as a Wilderness Study Area.	Same as Alternative B.
Parameter – Other Special Designations (see Section 2.5.22.4)				
Retain 23 special designation areas totaling 34,495 acres.	Retain 3 special designation areas totaling 1,810 acres.	Retain 2 special designation areas totaling 600 acres.	None of the 23 special designation areas would be retained.	Same as Alternative B.
No existing special designation areas would be changed.	Drop 8 areas from special designation totaling 2,155 acres.	Drop 7 areas from special designation totaling 1,995 acres.	None of the 23 special designation areas would be retained.	Same as Alternative B.

Table 2.4-1 (Continued)

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
No existing special designation areas would be designated as ACECs.	12 special designation areas, totaling 30,530 acres, would be designated as ACECs. An additional 28,700 acres associated with Mount Irish and Hendry's Creek/Rock Animal Corral would be also designated as part of these ACECs.	14 special designation areas, totaling 31,900 acres, would be designated as ACECs. An additional 28,700 acres associated with Mount Irish and Hendry's Creek/Rock Animal Corral would be also designated as part of these ACECs.	Same as Alternative A.	Same as Alternative B.
17 special designation areas, totaling 12,705 acres, would be withdrawn from disposal under the public land laws.	12 special designation areas, totaling 11,630 acres, would be withdrawn from disposal under the public land laws.	Same as Alternative B.	None of the 23 special designation areas would be withdrawn from disposal.	Same as Alternative B.
Three special designation areas, totaling 2,490 would be segregated from disposal under the public land laws.	One special designation (Garnet Hill) area, totaling 1,210 acres, would be segregated from disposal under the public land laws.	Same as Alternative B.	None of the 23 special designation areas would be segregated from disposal.	Same as Alternative B.

2.5 Management Direction for Resource Programs

2.5.1 Introduction

Complete information on management direction for the resource programs is presented in the sections that follow. The information presented in this section as well as the information in **Table 2.4-1** is included as part of the impact analysis.

2.5.2 Air Quality

Introduction

Out of all of the possible management activities considered, smoke produced from wild and prescribed fires is the main factor affecting air quality. Smoke may limit a land manager's ability to use larger and more frequent prescribed burns for restoration and maintenance of fire-dependent ecosystems. The Clean Air Act requires federal agencies to comply

with all federal, state, and local air pollution requirements. The Clean Air Act also requires each state to develop a state implementation plan for regions within the state that are nonattainment, to ensure that the national ambient air quality standards are attained and maintained for the criteria pollutants. Federal agencies are required to ensure that their actions conform to state implementation plans. The Nevada Department of Environmental Protection is responsible for producing the state implementation plan. The current Nevada applicable state implementation plan is silent on requirements for wildland and prescribed fire emissions. The Ely District is considered in attainment, and the Nevada state implementation plan does not address these issues for the District.

The national ambient air quality standards are described in the Clean Air Act and have been established for six pollutants. Of these six criteria pollutants, natural resource management activities largely affect only one—the production of particulate matter. Regulated particulate matter produced from fire includes particulates less than 10 micrometers and particulates less than 2.5 micrometers in aerodynamic diameter (PM₁₀ and PM_{2.5}, respectively). Since fire and smoke are a natural part of forest and rangeland ecosystems, particulates produced from fire do not seriously affect these ecosystems. Land managers and the public must make choices regarding prescribed fires and unplanned wild fires. Land managers have little control over where, when, and how much smoke is put into the air during unplanned wild fires. Through prescribed fire, smoke levels can be better managed. For example, air quality can be somewhat diminished in the short

RMP Management Focus

The restoration and maintenance of healthy ecological systems within watersheds is a primary focus for the future management of the Ely District. Healthy ecological systems are geographically diverse and change over time. They are compatible with soil potential and are resilient to disturbance.

Resources and resource uses will be managed to restore or maintain ecological health. Certain resource management changes and active treatments may need to be implemented, in portions of watersheds, to accomplish this objective. Adaptive management will be pursued to avoid deteriorating conditions that favor invasive plants and catastrophic fires. Any projects will be implemented so as to result in a mosaic of vegetation within a watershed.

In the long term, natural disturbance (such as drought or fire) will occur and fewer treatments will be needed to maintain ecological health. The result will be a variety of vegetation phases, which will provide diverse, healthy conditions for future generations.

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term so that the probability of violating air quality standards is decreased in the long term. Prescribed burns are management tools used to mitigate emissions and to provide for public health and safety.

The BLM does not have specific management programs regarding air resources and, therefore, no management direction is specifically listed for each alternative. However, air resources are influenced by management action implemented under other programs and by other agencies.

Desired Range of Conditions

Air quality in the Ely District would meet all National Ambient Air Quality Standards and overall air quality would be considered good.

Goal

Meet all applicable local, state, Tribal and National Ambient Air Quality Standards under the Clean Air Act (as amended), and prevent significant deterioration of air quality within the Ely District from all direct and authorized actions.

2.5.2.1 Monitoring of Air Quality

No air quality monitoring by the BLM is anticipated.

2.5.3 Water Resources

Introduction

Water quantity and quality are vital considerations for resource management and health within the planning area. Surface water and groundwater supplies are primary components of wildlife and fisheries habitats, and are major contributors to ecological site potential and municipal and agricultural capabilities. In the arid and semi-arid climate of the planning area, retention of soil moisture and maintenance (or enhancement) of aquifer recharge are major considerations for planning on BLM-administered lands. Enhancement or maintenance of spring and stream flows where they exist on BLM-administered lands is an important outcome of sustained groundwater recharge, vegetation management, and coordinated allocation of water resources to address demands. Close interaction with non-agency users, such as agricultural or municipal entities, also is necessary to sustain or improve water resources availability on BLM-administered lands.

Through the state water rights permitting and adjudication process, as well as through NEPA and other federal, state, and county regulatory provisions, the BLM participates in water rights permitting and the allocation of surface and groundwater quantities on the public lands it administers. The right to use surface or groundwater resources in Nevada is administered by the State Engineer, Nevada Division of Water Resources, under the Doctrine of Prior Appropriation. If new water rights are applied for, or if holders of existing water rights apply for changes in quantity, beneficial use, point of diversion, location, or season of use, the BLM has the right to be involved in the subsequent state permitting process. As in other western states, water rights administration continually evolves through legislation and judicial means, regulatory

2.5 Management Direction for Resource Programs

decisions, and administrative agreements. The BLM remains involved in such water resources management activities.

Suitable water quality is important for proper ecological function as well as for supporting designated beneficial uses, including domestic supply (drinking water). The maintenance or improvement of water quality in streams and aquifers is therefore a major BLM management goal. The Federal Water Pollution Control Act of 1977, as amended (commonly known as the Clean Water Act) requires the restoration and maintenance of the chemical, physical, and biological integrity of the Nation's waters. The State of Nevada has regulatory primacy in administering the Act within its boundaries. A Memorandum of Understanding exists between the state and the BLM, giving the BLM the authority and responsibility for implementing the Clean Water Act on agency-administered lands in Nevada. In addition to the Clean Water Act, numerous laws, regulations, policies, and Executive Orders direct the BLM to manage water quality for the benefit of the Nation and its economy, and to sustain multiple uses of the land. The BLM is required to maintain water quality where it presently meets approved state water quality requirements, guidelines, and objectives, and to improve water quality on public lands where it does not meet those requirements, guidelines, and objectives. Evaluation and application of best management practices for activities such as exploration and mining, recreation, woodland harvesting, and vegetation management is necessary for meeting water quality objectives. Active involvement with agricultural and municipal interests is necessary to ensure that pesticide and fertilizer uses do not impair water quality on BLM-administered lands, and that drinking water sources (including wellheads and well recharge zones, particularly those which have been or may be established in public drinking water source protection plans) are adequately protected in accordance with the 1986 and 1996 amendments to the federal Safe Drinking Water Act and Nevada's Environmental Protection Agency-approved Safe Drinking Water Program.

Desired Range of Conditions

Water resources on BLM-administered lands within the Ely District would be suitable for the appropriate beneficial uses.

Goal

Restore and maintain the chemical, physical, and biological integrity of the waters in the Ely District to maintain healthy ecological systems while sustaining multiple uses.

The BLM does not have specific management programs regarding water resources and, therefore, no management direction is specifically listed for each alternative. However, water resources are influenced by management action implemented under other programs and by other agencies.

2.5.3.1 Monitoring of Water Resources

As resources allow, the BLM would cooperate with state agencies, municipalities, industry, agriculture, universities, and other federal agencies in the eastern Nevada region to collect and interpret water resources data, and to participate in local, state, and regional water resources management. Aquifer

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recharge would be monitored at selected representative wells and springs throughout the planning area, and on nearby lands as access agreements would allow. The BLM would periodically monitor water levels and spring flows and durations either individually or cooperatively. Existing historical data would be retrieved as available and archived with new data. Stream channel geometry and flow data also would be periodically collected at selected perennial, intermittent, and ephemeral locations of interest. Meteorological data (e.g., precipitation, temperature, wind speed and direction, solar radiation, and relative humidity) also would be collected at selected locations. Site selection, data collection procedures, and the frequency of data collection would depend on the data type, prior knowledge of suitable and/or significant monitoring locations, budget and personnel considerations, and anticipated resource activities within candidate locales. Water resources trends within the planning area would be periodically reviewed.

Water quality monitoring would be conducted at selected sites (wells, springs, and streams) for various parameters to compare applicable water quality requirements, guidelines, and objectives to current conditions. Data collection and interpretations would be done either by the BLM individually or cooperatively. Water quality data collection would be conducted in coordination with the water quantity monitoring described above. Water quality constituents to be analyzed would be determined by the BLM, with due consideration of planning needs and the Memorandum of Understanding between the BLM and the state of Nevada. Sampling and analysis would follow standard U.S. Environmental Protection Agency-approved protocols for field and laboratory. The BLM would be actively involved in protecting drinking water sources, by developing and implementing wellhead protection plans and assessing the presence and effects of fertilizers, pesticides, herbicides, and other contaminants released to water resources by agriculture, municipalities, industry, and the agency itself. Water quality trends within the planning area would be periodically reviewed for management purposes.

2.5.4 Soil Resources

Introduction

Soils are the foundation for all vegetation growth and the source of sediment in streams. Management goals for vegetation, watershed, wildlife, and livestock cannot be achieved without productive and stable soils. Soils in the planning area formed under arid and semi-arid conditions and are geologically young. Parent material weathering, accumulation of organic matter, and nutrient cycling proceed at relatively slow rates in the existing environment. Soil recovery processes also are slow; therefore, disruption of soils can lead to long-term changes in soil stability, chemical and microbial conditions, and productivity.

Site stability and watershed health are closely linked to soil use and management, as well as to inherent soil characteristics resulting from parent materials and soil-forming processes. Knowledge of soil characteristics, erosion hazards, and vegetation potential (as available from the soil inventory) is essential for evaluating management practices and maintaining resilient ecosystems. Control of accelerated erosion and sedimentation, selection of best management practices for disturbed areas, and range rehabilitation programs depend on the maintenance or enhancement of desirable soil characteristics. The establishment of desirable plant communities to increase infiltration, conserve soil moisture, and promote groundwater recharge is a primary means of maintaining or enhancing soil quality. Soil biotic crusts help the sustainability of rangelands and woodlands by increasing soil stability and contributing to nutrient cycling.

Desired Range of Conditions

Soils throughout the District would exhibit infiltration and permeability appropriate to the soil type, with erosion and compaction having minimal effect on soil productivity. Soil biotic crusts would occur where they would be expected to naturally occur in the absence of significant disturbance.

Goal

Maintain or improve long-term soil quality.

Soil resources are influenced by management actions implemented under other programs. As such, there are no program alternatives listed specifically for soils. The resource goal and activities identified for Soil Resources (see Interactions with Other Programs, Section 4.4) would be achieved through the management directions of other programs. When carried out, these management actions would maintain or improve long-term soil productivity.

2.5.4.1 Monitoring of Soil Resources

Soil health and condition would be monitored by conducting reviews of ground-disturbing projects for implementation and effectiveness of best management practices, and by periodically assessing selected undisturbed sites for various parameters including erosion and sedimentation, topsoil characteristics, and groundcover. Monitoring the effects of other resource management actions such as livestock grazing and watershed projects would consider soil condition and health. Baseline soil condition data would be provided through the ecological site inventories and watershed analyses. Site selection, data collection procedures, and the frequency of data collection would depend on the data type, prior knowledge of suitable and significant monitoring locations, budget and personnel considerations, and anticipated resource activities within candidate locales. Soil quality trends within the planning area would be periodically reviewed for management purposes.

2.5.5 Vegetation

Introduction

With passage of the Federal Land Policy and Management Act, the Public Rangeland Improvement Act, and the Healthy Forests Restoration Act, objectives and priorities for management of public land vegetation resources have been clearly defined. Guidance contained in title 43, subpart 4180 of the Code of Federal Regulations directs public land management toward the maintenance or restoration of the physical function and biological health of vegetation systems. Land Health Standards for lands administered by the BLM in the state of Nevada were approved by the Secretary of the Interior in 1997. Management actions and goals in this RMP would meet the requirements of regulations and policies directing vegetation management. The vegetation management goal also would maintain and improve the condition and trend in plant communities that provide wildlife habitat, forage, recreation, scientific, scenic, ecological, water, and soil conservation

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benefits for consumptive and non-consumptive uses. The long-term goal of vegetation management across the landscape is to maintain or improve vegetation condition to be within desired range of conditions that meet management objectives within a watershed. This could include a mixture of varying ecological states or phases by ecological sites across the landscape (see Appendix D for discussion of ecological states and phases), rather than management toward any one specific ecological state.

Most vegetation management over the past several decades has been based on the ecological status (e.g., late seral, early seral) of vegetation communities using the traditional theories of vegetation succession (i.e., Clements' successional theory) that "climax" or "potential natural vegetation" was the desired condition for most sites. Ecological site descriptions (U.S. Department of Agriculture, Natural Resource Conservation Service 2003) are the basis for defining ecological status and determining site potential. Ecological status is determined by comparing existing vegetation species with species listed in the ecological site description. An ecological site is a distinctive kind of land with specific physical characteristics that differ from other kinds of land in its ability to provide kind and amount of vegetation. Ecological site descriptions provide a summary of expected species composition and variability, and total vegetation ground cover within a specific site, as well as anticipated responses from some management actions.

Management objectives for previous land use and activity plans have been to attain late seral or potential natural vegetation as defined by an ecological site description. For example, a vegetation community with early seral status would have been managed to achieve late seral status, within the limits of the site potential. This also included applying treatments to sites that had been invaded by annual species or species that were not within an ecological site potential as described by ecological site descriptions (e.g., pinyon-juniper invaded sagebrush sites). Previous management direction to attain late seral ecological status was based on the expectation of increased productivity and ecological stability when compared to earlier seral communities.

Managing toward late seral status would not meet the vegetation goal of this RMP. The process of managing for a specific ecological (seral) status mainly considers weight of vegetation produced and does not specifically describe plant type, structure, cover, or requirements for wildlife except within a range of species composition such that at least half of the plant material was of the species and amounts considered appropriate for the site. For example, a late seral community could include: 1) a shrub dominant vegetation type with minimal herbaceous understory, or 2) a herbaceous dominated community with very little contribution of shrubs.

Vegetation communities as described in the ecological site descriptions express a variety of species composition and cover consistent with site potential. Therefore, ecological site descriptions would be used as the initial basis for determining the desired range of conditions for vegetation within this RMP. Management as described in all alternatives would change from managing for production as described above to managing for vegetation communities that are resistant and resilient to disturbance, and that provide soil stability, nutrient cycling, and essential requirements of dependant wildlife. Vegetation conditions (e.g., composition and cover) within a watershed or across vegetation types could range from herbaceous dominated to shrub dominated sites, but individual life forms (i.e., shrub, forbs, and grasses) would be present or could return after fire within ranges expressed in the ecological site guides. Transitions to undesired states and phases would be avoided if possible. The overall goal would be to attain a diverse

2.5 Management Direction for Resource Programs

mixture (mosaic) of vegetation states and phases consistent with site potential and watershed objectives. Goals would be based on principles of state and transition models (Appendix D) using the ecological site descriptions as a guide for determining the desired range of conditions.

The determination and interpretation of each state and phase for each vegetation type discussed in this RMP have been based on extrapolation from existing data and preliminary models. Based on data extrapolation, approximations of each state were developed. As more information becomes available and additional state and transition models are developed and refined, states and phases for the vegetation types could change.

Desired Range of Conditions

The desired range of conditions explains the goals toward which physical and biological components would be moving or directed as a result of implementing a specific alternative. They do not imply that all portions of the landscape would be within the desired ranges listed. The desired range of conditions should fall within variations identified in the ecological site description and would vary by alternative.

Vegetation communities would display resistant and resilient ecological conditions including healthy, productive, and diverse populations of native or desirable nonnative plant species appropriate to the site characteristics.

The following addresses management and treatment alternatives to achieve the desired range of conditions within a given parameter (vegetation type).

Goal

Where possible, manage vegetation resources to achieve or maintain resistant and resilient ecological conditions while providing for sustainable multiple uses and options for the future across the landscape.

Management Common to All Alternatives for all Vegetation

Analysis of rangeland health would be completed on a priority watershed basis. Northeast Great Basin and Mojave Southern Great Basin Area Resource Advisory Council standards (Appendix A) would be appropriately applied to determine if vegetation communities are functioning properly. Order 3 soil surveys, ecological site descriptions, soil map unit descriptions, and on-site investigations would be used as a foundation to determine appropriate site characteristics and potential when applying vegetation treatments. Current state and transition models and ecological site descriptions would be used to determine where appropriate treatments are needed to achieve a desired range of conditions. The alternatives do not place an emphasis on treatment of any vegetation type over another. The expected time frame for accomplishment of the goal for vegetation for any alternative is 50 to 100 years.

The Healthy Forests Restoration Act of 2003 (Section 102 (e)) directs field offices to have a process in place to identify and protect old-growth trees or their equivalent. Based on the above direction, identification of,

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and protection measures for old-growth characteristics for tree species within the Ely District are listed below:

- Definitions to be used for old-growth would come from the best available scientific research data, and are preferred to be published within scientific literature documents or approved site description guides (e.g., Natural Resource Conservation Service Forestland Site Guides). In addition, old-growth definitions would be applied only to soil-correlated woodland/forestland sites (i.e., not rangeland ecological sites that have been encroached or invaded by trees). A definition of old-growth is supplied below in the parameter descriptions for each applicable species.
- Identification of old-growth depends on the forest/woodland type. Old-growth forests are characterized by old trees and related structural features. Old-growth encompasses states of stand development that typically differ from other states in several ways including tree size; accumulations of large dead, woody material; number of canopy layers and species composition. Old-growth trees may have large diameters and have approached their maximum size and have usually ceased height growth commensurate with site production capabilities.

Protection of large, old-growth trees would include actions similar to the following:

- Efforts would be made during all projects to maximize the retention of large, old-growth trees, as appropriate for the forest type.
- Actions should fully maintain, protect, or contribute to the restoration of the structure and composition of old-growth stands according to old-growth conditions characteristic of the forest/woodland type, taking into account landscape fire adaptation and watershed health, and retaining trees that contribute to old-growth structure. Actions could include thinning smaller, younger trees, thinning competing trees (i.e., conifer trees in aspen) or understory burning that would protect old-growth trees from stand-replacing wildland fires or other natural disturbances. Old-growth definition for forest types within the District may be obtained from published sources (U.S. Forest Service 1993).

Treatments Common to All Alternatives for all Vegetation

Treatments would be emphasized in areas that have the best potential to respond and return to the desired range of conditions. Areas that do not respond well are usually those that have crossed a threshold to an undesired condition, and are characterized by an understory of invasive species or absence of a native seed source.

All treatment methods would be available for any treatments conducted for all alternatives. Methods to be used for a given site would be selected on the basis of site information, specific management objectives developed through the watershed analysis process or associated with various activity plan and other management goals, and budgetary constraints. These methods may include either active treatments (e.g., prescribed fire, tree or shrub removal, weed eradication, and seeding) or passive treatments (e.g., changes in grazing practices or restrictions on other uses). These methods are discussed further in Appendix E, Tools and Techniques. Monsen et al. (2004) also provide an excellent review of the methods

2.5 Management Direction for Resource Programs

and tools appropriate for restoration treatments as well as a broad discussion of restoration planning, processes, and subsequent management. Expected treatment results range from relatively near-term changes (e.g., herbicide treatment of weed populations) to long-term changes in community structure and composition that may not reach full expression for several decades.

2.5.5.1 Parameter – Pinyon-Juniper Woodlands

Parameter Description

Recent increases in density and expansion of pinyon-juniper woodlands have caused some disagreements and difficulties to those attempting to classify pinyon-juniper woodland sites. The Natural Resource Conservation Service has developed a key to identify and distinguish pinyon-juniper woodland sites from rangeland ecological sites (U.S. Department of Agriculture, Natural Resource Conservation Service 2003). Three common characteristics used in the key to identify pinyon-juniper woodland sites include: 1) soils are typically very shallow, rocky, and droughty; 2) topographic or soil features limit the frequency and intensity of managed natural wildfire, allowing tree survival; 3) there is physical evidence of mature potential"(greater than 150 years old) trees on the site, or trees existing on dry rocky soils are expected to progress to a mature stand with greater than 25 percent canopy cover. The Ely District would use the key described above and soil/vegetation correlations developed by the Natural Resource Conservation Service to classify pinyon-juniper woodlands within the planning area. Future published data that further refines the classification of pinyon-juniper woodland sites also could be used in conjunction with the key mentioned above.

Approximately 3,593,400 acres of pinyon-juniper woodlands exist on the Ely District. Pinyon-juniper woodlands constitute approximately 31 percent of all vegetation communities in the planning area.

The general old-growth definitions for pinyon-juniper woodlands listed below are intended to present general guidelines and characteristics. Rationale and criteria used to determine, identify, and protect old-growth conditions would be documented at the site-specific level.

Pinyon-juniper old-growth characteristics include broad asymmetric tops, deeply furrowed bark, twisted trunks or branches, dead branches and spike tops, large lower limbs, hollow trunks (mostly in juniper), large trunk diameters relative to tree height, and branches covered with a bright yellow-green lichen. Old-growth stands may consist of all ages (uneven-aged structure) or one age (even-aged structure), and dominant trees are often more than 400 years old (Miller et al. 1999). Diameter at root crown is usually greater than 18 inches on high production sites and greater than 12 inches on low production sites (U.S. Forest Service 1993). Most old-growth pinyon-juniper stands occur in locations where shallow, rocky soils and steep topography limit fire occurrence and spread (Miller et al. 1999). Most old-growth pinyon-juniper stands are open such that a variety of understory vegetation occurs within the community (i.e., tree canopy cover usually does not exceed 35 percent) (Miller et al. 1999).

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No particular old-growth definition is supplied for swamp cedar (i.e., Rocky Mountain juniper growing in valley bottom areas, particularly in Spring Valley and White River Valley) as these stands are unique, and would be protected or treated to maintain or improve stand characteristics.

Desired Range of Conditions for Pinyon-Juniper Woodlands

The desired range of conditions listed in **Table 2.5-1** represents the desired percentages of each pinyon-juniper woodland state and phase based on management goals of the alternative. Variation of 5 percent above or below those listed in **Table 2.5-1** would be considered within the desired range. These data are graphically presented in **Figure 2.5-1** for each alternative. The first chart in the figure depicts the current conditions for the plant community. The second through fifth charts in **Figure 2.5-1** illustrate the percentages of the plant community (left axis) in the described states (lower axis) that are expected to result over a period of 50 to 100 years for the differing alternatives. See Appendix D for a discussion of ecological states and phases.

Table 2.5-1
Desired Range of Conditions of Pinyon-Juniper
(Distribution of Woodland Phases and States)
for Various Alternatives

State and Phase	Herbaceous State	Herbaceous State (Immature Woodland Phase)	Tree State (Mature Woodland Phase)	Tree State (Overmature Woodland Phase) ¹	Altered State
Canopy Description	0 to 10% canopy cover-includes herbaceous, herbaceous-shrub, and sapling phase	11 to 20% canopy cover	21 to 35% canopy cover	36 to 50% canopy cover	Site dominated by invasive species or weeds
Current Conditions	9% (323,400 acres)	4% (35,900 acres)	9% (323,400 acres)	81% (2,910,700 acres)	4% (35,900 acres)
Alternative					
Alternative A	10% (359,300 acres)	10% (359,300 acres)	30% (1,078,000 acres)	50% (1,796,700 acres)	0% (0 acres)
Alternative B	15% (539,000 acres)	35% (1,257,700 acres)	45% (1,617,000 acres)	5% (479,700 acres)	0% (0 acres)
Alternative C	40% (1,437,360 acres)	35% (1,257,700 acres)	20% (718,700 acres)	5% (479,700 acres)	0% (0 acres)
Alternative D	30% (1,078,000 acres)	25% (898,400 acres)	15% (539,000 acres)	30% (1,078,000 acres)	0% (0 acres)
Alternative E	Same as Alternative B	Same as Alternative B	Same as Alternative B	Same as Alternative B	Same as Alternative B

¹Overmature woodland refers to woodlands exhibiting greater than 35 percent canopy cover. This classification is not the same as old growth although the two classifications may coincide in some situations.

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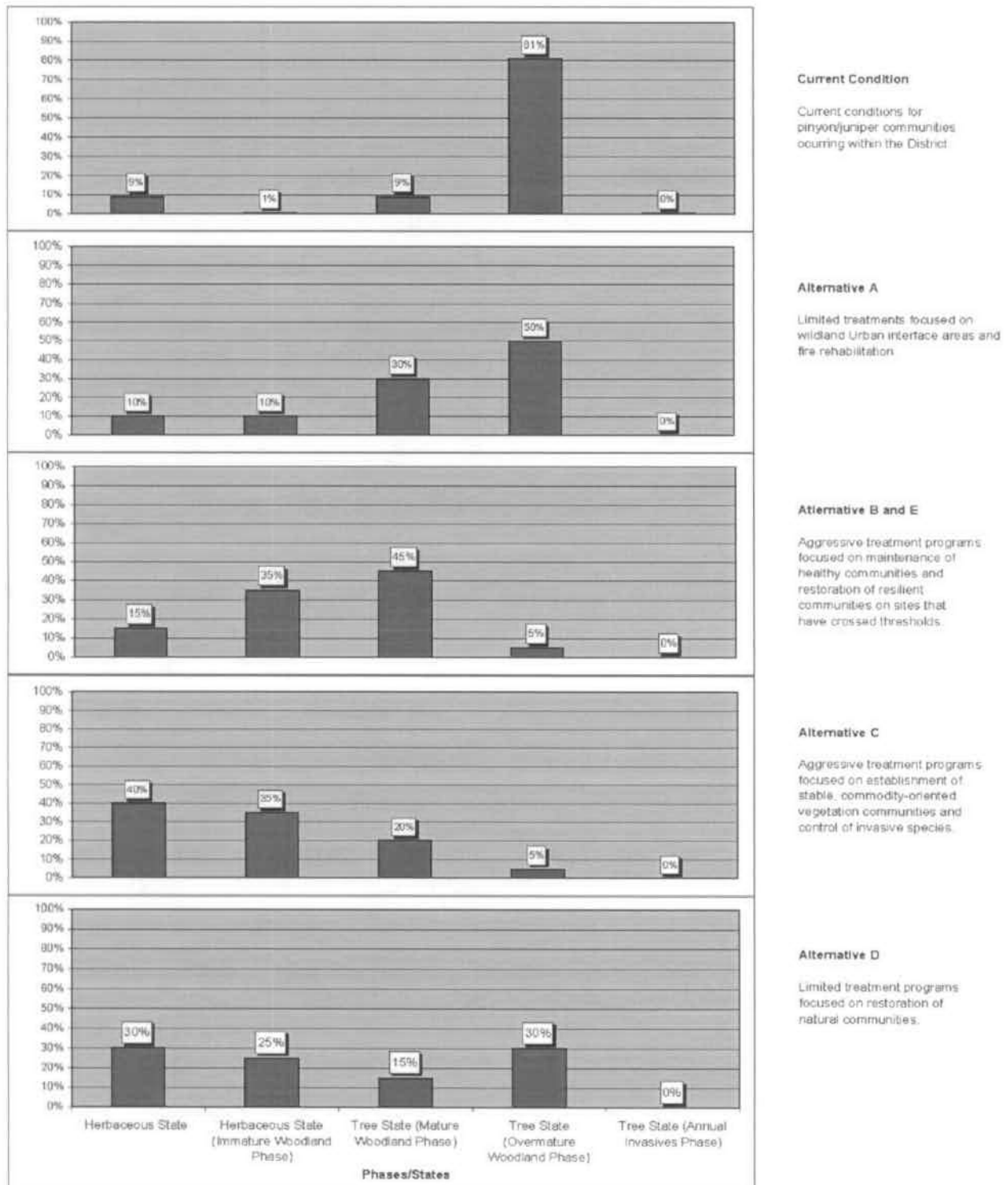


Figure 2.5-1. Desired Range of Conditions for Pinyon-Juniper Under Various Alternatives

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A threshold occurs between states where a new array of perennial native species have become established and canopy cover has increased because of the lack of disturbance. The exact determination of a threshold varies with each ecological site, but it is generally understood that the canopy cover is increasing and the composition of understory vegetation species is being reduced due to the lack of disturbance or unbalanced disturbances within the site. Once a threshold has been crossed and the vegetation has changed, seed sources for the previous dominant perennial species are commonly absent or depleted, and it is very rare that the state of the ecological site would return to the original community or state even after a disturbance. Thresholds are essentially the transition from 1) an available and viable seed source allowing for movement back to an earlier phase of the same state to 2) the lack or absence of seeds making transition to an earlier phase impossible without supplemental seeding.

Pinyon-juniper stands would be relatively open without inhibiting density and with occurrence of site-appropriate understory species (e.g., sagebrush and perennial grasses). Invasive plant species would not occur, or would be very limited in composition. Old growth pinyon-juniper sites would retain old growth characteristics appropriate to site potential (see old growth definition above). Insect and diseases would be within natural disturbance ranges.

The Mature Woodland Phase represents the highest amount of tree canopy cover that could occur without significant decrease in understory species. As canopy cover increases past 35 percent, understory species begin to diminish. Management actions would direct communities to various phases based on the goal of the alternative. To maintain healthy, resilient communities, management actions for alternatives would strive to prevent pinyon-juniper woodlands from reaching the Overmature Phase. For Alternative D, the amount of pinyon-juniper woodland occurring in each phase would be primarily determined by natural disturbances. The Mature Phase represents the average site potential of most sites, and is the upper end of a healthy, resilient, and diverse community. This phase is described as: tree canopy cover of mature trees (greater than 150 years old) is approximately 20 to 35 percent, with the tree composition made up of 50 to 70 percent juniper and 30 to 50 percent pinyon. Understory composition (by weight) within the woodland site is approximately 30 to 35 percent grasses, 10 to 15 percent forbs, and 50 to 60 percent shrubs and small trees (4.5 feet tall). The Mature Phase has a visual aspect and vegetation structure dominated by singleleaf pinyon or Utah juniper trees that have reached or are near maximal heights for the site. The understory plant community is dominated by perennial grasses, forbs, and sagebrush. The major plant species, by category, that should occur within pinyon-juniper woodland understory are: 1) trees: singleleaf pinyon, Utah juniper; 2) perennial grasses: bluebunch wheatgrass, Indian ricegrass, Sandberg's bluegrass, bottlebrush squirreltail; 3) forbs: lupine, penstemon, arrowleaf balsamroot; and 4) shrubs: black sagebrush, antelope bitterbrush, desert bitterbrush, and serviceberry. Site-specific ecological site descriptions would be consulted for site-specific objectives, as some sites do not have potential to meet the above description.

The desired range of conditions as listed in **Table 2.5-1** does not imply that the entire landscape would be distributed in those percentages at any point in time. It does explain the overall mosaic and direction pinyon-juniper woodlands would be moving toward, if current conditions are outside the desired percentages. For example, if the goal is to move an overmature woodland to a mature woodland; after treatment the woodland could be in the early herbaceous/sapling or immature phase for some time, but uses would be managed to allow the woodland to move toward the mature phase. The mixture of untreated

areas with treatment areas of different ages is expected to provide the desirable mosaic of community composition and structure essential for wildlife habitat and other uses.

Cheatgrass, an invasive fire adapted species, dominates the understory in approximately 8 percent (299,000 acres) of the pinyon-juniper woodland community. In areas where cheatgrass dominates the understory component, mechanical or chemical application treatments would be preferred over prescribed fire. If treatments or fire occur in these plant communities, the treatments would be followed by a seeding of competitive perennial species or other cheatgrass suppression-type treatments (e.g., chemical application or use of a temporary annual cover crop).

Some general factors that can be used to identify when pinyon-juniper woodlands are outside the desired range of conditions include:

1. Tree canopy cover has increased across a threshold level (i.e., 35 percent canopy cover) and understory perennial grasses, forbs, and sagebrush composition have decreased across a threshold level such that perennial bunchgrasses, forbs, and sagebrush are rare or absent in the understory.
2. Tree density and fuel accumulation have reached the point of promoting fires that are larger and more likely to crown than ordinarily would be expected.
3. Cheatgrass and other annual grasses and forbs (e.g., mustards) are present or dominate the understory community.
4. One or more of the weeds that are on the Nevada state noxious or invasive weed lists, or a highly competitive invasive weed dominates the understory, competitively excluding the native perennial species.

Alternative A

Case-by-case management to reduce the amount of overmature woodlands or woodlands near the threshold of mature/overmature would continue. Priority treatments would occur near wildland urban interface areas, with wildlife habitat and livestock needs being second priority. Management emphasis would focus on changing woodlands from the mature and overmature phases (tree state) to the herbaceous state to improve understory composition and reduce the risk of crown fires.

Comparison of data within the Current Conditions and Alternative A rows of **Table 2.5-1** indicates that approximately 1,149,900 acres (2,910,700 – 1,796,700) [5,900 – 0] or 32 percent of the area occupied by this type would have to be treated and the remaining 68 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative A.

Most common tools used to attain desired range of conditions for pinyon-juniper woodlands would include prescribed fire and mechanical methods (e.g., sawing and chipping).

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Alternative B

Pinyon-juniper communities would be managed to achieve a variety of phases that would be resilient to disturbance and provide essential wildlife habitat. Management actions would strive to direct woodland communities toward desired ranges listed in **Table 2.5-1**. Management actions would be proactive in nature (i.e., treatments would occur before undesired phases or species could become established).

Comparison of data within the Current Conditions and Alternative B rows of **Table 2.5-1** indicates that approximately 2,766,900 acres (2,910,700 – 179,700] [5,900 – 0] or 77 percent of the area occupied by this type would have to be treated and the remaining 23 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative B.

Treatment priorities would consider public safety and protection from catastrophic wildfire above other considerations. The next treatment priorities would be to maintain or prevent immature and mature phases from crossing to the overmature phase or becoming infested with invasive species. Treatments to direct overmature woodlands toward earlier phases (i.e., herbaceous state and phase) would be considered on a watershed basis, and only if existing immature and mature woodlands are considered resilient and do not need treatments to maintain resiliency. Treatments would be implemented to maintain a balance of various states and phases at the watershed scale.

The most common tools to be used to meet the desired range of conditions would include herbicide application, mechanical methods (e.g., chipping, sawing, mowing, mulching), and prescribed fire. Treatment with herbicides would be considered when most economically and ecologically feasible. Land uses would be managed, or treatments applied, to maintain areas that are currently meeting desired conditions.

Any seeding necessary for restoration or rehabilitation purposes would be implemented using appropriate mixes of desired species adapted to the site. Seed mixes would be determined on a site-specific basis dependent on the probability of successful establishment. The preference would be to use native species that would compete with annual invasive species.

Alternative C

Pinyon-juniper communities would be managed to achieve phases that would provide more products for commercial use (e.g., herbaceous state for grazing). There would be allowance for some areas to occur outside the desired range of conditions, but management actions would strive to direct those communities toward phases that would maximize production of the most common commercial products (e.g., grazing). As demand for woodland products (e.g., firewood, fence posts, Christmas trees, chipped fuel) increases, management would shift from more herbaceous phase to the immature or mature phase. **Table 2.5-1** reflects an average of phases desired, should the demand for biomass products continue to increase along with current demand for grazing.

Comparison of data within the Current Conditions and Alternative C rows of **Table 2.5-1** indicates that approximately 2,766,900 acres (2,910,700 – 179,700] [5,900 – 0] or 77 percent of the area occupied by

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this type would have to be treated and the remaining 23 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative C.

Priority treatments would occur in areas in the overmature phase. The most common tools used to meet the desired range of conditions would include mechanical methods (e.g., chipping, chaining, sawing, mowing, mulching). Treatment methods would emphasize the use of commercial activities (e.g., grazing, selling biomass, etc.) to achieve the desired range of conditions. If demand, feasibility, and access are limited and would prevent efficient mechanical treatments, prescribed fire or chemical treatment would be implemented. Land uses would be managed, or treatments applied, to maintain areas that are currently meeting desired conditions.

Any seeding necessary for restoration or rehabilitation purposes would be implemented using appropriate mixes of desired species adapted to the site. Seed mixes would be determined on a site-specific basis dependent on the probability of successful establishment. Preference would be to use species that would compete with annual invasive species and provide sustainable products.

Alternative D

Natural processes would be allowed to occur within pinyon-juniper woodlands. The desired range of conditions for pinyon-juniper woodlands would be primarily defined by natural processes. Management actions primarily would be passive in nature (i.e., not including mechanical, herbicides, or prescribed fire). Most discretionary land uses would be eliminated to prevent further establishment and spread of invasive and nonnative species.

Comparison of data within the Current Conditions and Alternative D rows of **Table 2.5-1** indicates that approximately 1,868,600 acres (2,910,700 – 1,078,000] ~~±~~ 5,900 – 0] or 52 percent of the area occupied by this type would have to be treated and assume no change in the remaining 48 percent of the acreage to achieve the desired range of conditions identified for Alternative D.

Treatment priorities would focus on areas where invasive and nonnative species occur. Common tools to be used would include elimination or restriction of various uses and limited application of herbicides other than sulfonyleurea herbicides, other acetolactate synthesis inhibiting herbicides, and herbicides with adverse effects on aquatic species. Natural disturbances (e.g., wildfire) would be rehabilitated to prevent establishment of invasive species.

Only native species would be used for any seeding activities.

Alternative E

Same as Alternative B.

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2.5.5.2 Parameter – Aspen

Parameter Description

Approximately 7,000 acres of aspen communities exist within the Ely District. Aspen communities within the planning area generally occur as smaller stands in isolated pockets, mainly on northern and eastern slopes and within drainages at higher elevations on mountains. These communities, like most other natural communities of the Great Basin, are adapted to and somewhat dependent on periodic disturbance such as fire. Aspen communities comprise less than 0.5 percent of the total vegetation communities within the planning area.

Desired Range of Conditions for Aspen

The desired range of conditions listed in **Table 2.5-2** and illustrated in **Figure 2.5-2** represents the desired percentages of aspen states and phases based on management goals of the various alternatives. Variation of 5 percent above or below those listed in **Table 2.5-2** would be allowed. It is critical to protect all aspen communities, as they are very limited in occurrence throughout the planning area and provide essential habitat to various wildlife species.

Table 2.5-2

Desired Range of Conditions of Aspen (Distribution of Phases and States) for Various Alternatives

State and Phase	Herbaceous State (Herbaceous, and Herbaceous-Shrub and Sapling Phase)	Herbaceous State (Immature Woodland Phase)	Tree State (Mature Woodland Phase)	Tree State (Overmature Woodland Phase)
Canopy Description	0 to 15% tree canopy cover	16 to 29% tree canopy cover.	30 to 45% tree canopy cover	45% or greater tree canopy cover (includes conifer dominated)
Current Conditions	0% (0 acres)	0% (0 acres)	40% (2,800 acres)	60% (4,200 acres)
Alternative				
Alternative A	10% (700 acres)	10% (700 acres)	35% (2,450 acres)	45% (3,150 acres)
Alternative B	5% (350 acres)	25% (1,750 acres)	70% (4,900 acres)	4% (70 acres)
Alternative C	15% (1,050 acres)	55% (3,850 acres)	30% (2,100 acres)	4% (70 acres)
Alternative D	5% (350 acres)	10% (700 acres)	40% (2,800 acres)	45% (3,150 acres)
Alternative E	Same as Alternative B	Same as Alternative B	Same as Alternative B	Same as Alternative B

The following describes a desired average aspen community that would occur within site potential and would be resilient to natural disturbances.

Aspen communities would occupy historic range and be in stable or improving condition. Communities would be dominated by aspen trees with perennial grasses, forbs, and shrubs in the understory. Tree

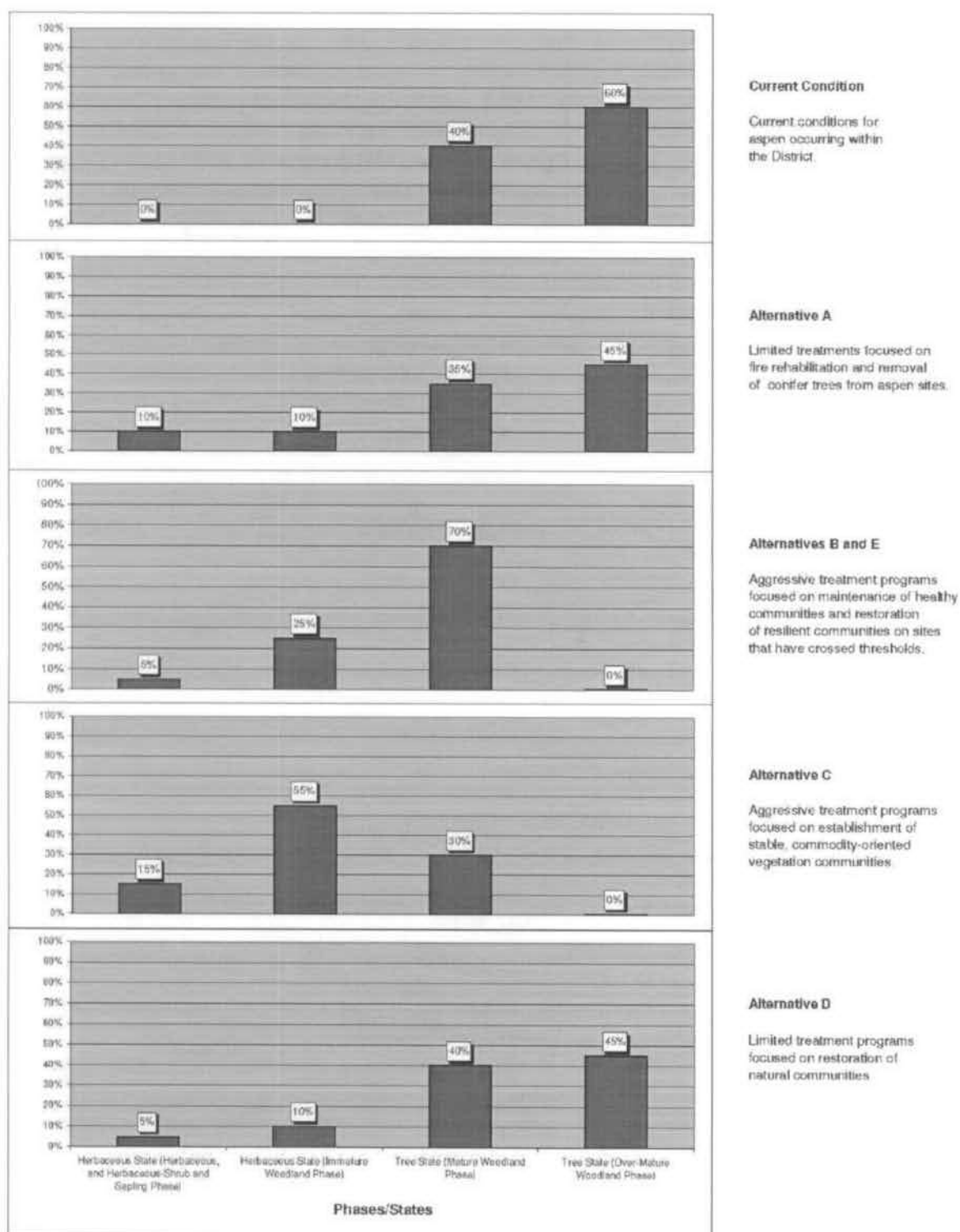


Figure 2.5-2. Desired Range of Conditions for Aspen Under Various Alternatives

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canopy cover would be less than 45 percent to allow a robust understory of desirable perennial grasses, forbs, and shrubs. Aspen regeneration would occur within site potential and would be protected from land uses. Aspen stands would exhibit a variety of tree size classes. White fir would contribute less than 30 percent of total tree composition, and would not inhibit regeneration and existence of aspen trees or understory species. Invasive species (e.g., cheatgrass, thistles) would not occur within aspen understory composition. Conifer trees would not dominate historic aspen sites or inhibit aspen growth and regeneration in historic aspen sites.

Some general factors to identify when aspen communities are no longer within desired range of conditions or resistant and resilient to disturbance include:

1. Tree canopy cover exceeds 45 percent causing desirable understory species to decrease beyond a threshold (recoverable) level.
2. Conifer trees dominate the tree overstory or contribute to more than 30 percent of total tree composition.
3. Tree density and fuel accumulation (including conifers) have reached the point of promoting fires that are larger and more likely to crown than ordinarily would be expected.
4. Aspen regeneration is non-existent or being compromised by grazing animals or other land uses.
5. Invasive species constitute a large composition of the understory.

Old-growth definitions listed below for aspen woodlands are intended to present general guidelines and characteristics. Rationale and criteria used to determine, identify, and protect old-growth conditions would be documented at the site-specific level.

Old-age is a relative term with aspen. The longest lived aspen trees usually do not persist past 200 years due to heart and butt rot caused by fungi species. However, the clonal root systems for these stands were established approximately 8,000 to 10,000 years ago and are considered to be some of the oldest organisms on earth. Therefore, aspen stands would be protected where possible to maintain or improve stand characteristics and promote regeneration.

Alternative A

Select aspen communities would be managed to increase regeneration of aspen trees and understory species. Sites where conifer tree species dominate the tree overstory would be priority areas for treatment. Most common treatment methods would include mechanical (e.g., sawing), grazing management, and prescribed fire treatments.

Comparison of data within the Current Conditions and Alternative A rows of **Table 2.5-2** indicates that approximately 1,400 acres (2,800 – 2,450) or 20 percent of the area occupied by this

type would have to be treated and the remaining 80 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative A.

Alternative B

The overall goal of this alternative would be to protect and restore resilience to aspen sites without losing any existing stands. Management actions would be proactive (i.e., treatments would occur before undesired phases or species could establish). Aspen sites would be a priority vegetation community to consider during watershed evaluation and restoration plans. Aspen sites would exhibit a mosaic of various phases throughout the landscape or watershed with a majority falling within the Mature Woodland Phase (Table 2.5-2). Aspen communities would be managed (using disturbance) to remain in or move toward those phases that would be resilient and resistant to disturbance. Regeneration would occur where potential allows, and would be protected through use restrictions or other protection methods. There would be allowance for some aspen sites to occur outside the desired range of conditions (i.e., 45 percent canopy cover), but management actions would strive to direct those communities toward the desired range of conditions.

Comparison of data within the Current Conditions and Alternative B rows of Table 2.5-2 indicates that approximately 4,130 acres (4,200 – 70) or 59 percent of the area occupied by this type would have to be treated and the remaining 41 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative B.

Areas where conifers dominate the tree overstory and where canopy cover exceeds the percentages listed in the desired range of conditions above (Overmature Phase) would be priorities for treatment. Treatments and land uses would be implemented to maintain or direct aspen communities toward the desired phases listed in Table 2.5-2. The most common treatment tools to be used would include prescribed fire, grazing management, and mechanical methods (e.g., sawing).

Any seeding necessary for restoration or rehabilitation purposes would be implemented using appropriate mixes of desired species adapted to the site. Seed mixes would be determined on a site-specific basis dependent on the probability of successful establishment. Preference would be to use native species that are adapted to the site and able to compete with annual invasive species.

Alternative C

Aspen sites would be managed to achieve phases that support commodity production (e.g., livestock forage, poles, and firewood). The Immature Woodland Phase would produce the best poles and herbaceous component for commodity uses. Regeneration of aspen would be protected by allowing grazing and aspen harvest to occur outside the growing season. Harvest quantities of both the herbaceous understory and tree overstory would be restricted to levels that would maintain or increase aspen within the planning area. Uses would only be allowed in areas where sustainable production exists.

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Comparison of data within the Current Conditions and Alternative C rows of **Table 2.5-2** indicates that approximately 4,830 acres (2,800 – 2,100] – [2,200 – 70] or 69 percent of the area occupied by this type would have to be treated and the remaining 31 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative C.

Priority treatment areas and commonly used tools would be the same as identified for Alternative B.

Any seeding necessary for restoration or rehabilitation purposes would be implemented using appropriate mixes of desired species adapted to the site. Seed mixes would be determined on a site-specific basis dependent on the probability of successful establishment. Preference would be to use native or nonnative species that are adapted to the site, capable of competing with annual invasive species, and able to provide sustainable products for multiple uses.

Alternative D

Natural processes would be allowed to occur within aspen communities. The desired range of conditions would be defined by natural processes with minimal influence from management and resource uses. Management actions would primarily be passive in nature (i.e., treatments would occur after undesired phases or species were established). Most discretionary land uses would be eliminated to prevent further establishment and spread of invasive and nonnative species. Aspen communities would be protected from grazing and further establishment or expansion of invasive species.

Comparison of data within the Current Conditions and Alternative D rows of **Table 2.5-2** indicates that approximately 1,050 acres (4,200 – 3,150) or 35 percent of the area occupied by this type would have to be treated and assume no change in the remaining 65 percent of the acreage to achieve the desired range of conditions identified for Alternative D.

Priority treatment areas would be in aspen sites where invasive and nonnative species are present. Common tools to be used would include elimination or restriction of various uses and application of herbicides other than sulfonylurea herbicides, other acetolactate synthesis inhibiting herbicides, and herbicides with adverse effects on aquatic species to remove invasive species. Natural disturbances (e.g., wildfire) would be allowed, but the site would be rehabilitated to prevent establishment of invasive species.

Only native species would be used for any seeding activities determined necessary to compete with invasive plants.

Alternative E

Same as Alternative B.

2.5.5.3 Parameter – High Elevation Conifer Species

Parameter Description

This parameter includes all conifer tree species that occur within the planning area, except for pinyon and juniper. The majority of the included species are ponderosa pine, white fir, sub-alpine fir, Douglas fir, Engelmann spruce, bristlecone pine, and limber pine. High elevation conifer species are scattered throughout mountain ranges in relatively small stands. These stands do not provide sufficient quantities to support commercial timber harvest on a sustained yield basis. Therefore, no lands would be available for commercial timber harvesting. However, non-timber commodities may be harvested from these communities under various alternatives.

Approximately 56,000 acres of high elevation conifer species exist within the planning area. This comprises less than 0.5 percent of total vegetation communities in the planning area.

Desired Range of Conditions for High Elevation Conifer

Management actions would direct high elevation conifers toward states and phases shown in **Table 2.5-3** with a goal to achieve stands that are resilient to natural disturbances. The desired ranges of conditions listed in **Table 2.5-3** and illustrated on **Figure 2.5-3** represent the desired percentages of high elevation conifer states and phases based on management goals of the various alternatives. Variation of 5 percent above or below those listed in **Table 2.5-3** would be allowed.

Table 2.5-3
Desired Range of Conditions of High Elevation Conifer (Distribution of States and Phases)
for Various Alternatives

State and Phase	Herbaceous State, (Herbaceous, and Herbaceous/Sapling Phase)	Herbaceous State (Immature Phase)	Tree State (Mature Phase)	Tree State (Overmature Phase) ¹
Canopy Description	0 to 15% canopy cover	16 to 31% canopy cover	31 to 40% canopy cover	41 to 60% canopy cover
Current Conditions	0% (0 acres)	0% (0 acres)	43% (24,000 acres)	57% (32,000 acres)
Alternative				
Alternative A	5% (2,800 acres)	5% (2,800 acres)	50% (28,000 acres)	40% (22,400 acres)
Alternative B	20% (11,200 acres)	25% (14,000 acres)	50% (28,000 acres)	5% (2,800 acres)
Alternative C	45% (25,200 acres)	35% (19,600 acres)	20% (11,200 acres)	4% (560 acres)
Alternative D	25% (14,000 acres)	25% (14,000 acres)	15% (8,400 acres)	35% (19,600 acres)
Alternative E	Same as Alternative C	Same as Alternative C	Same as Alternative C	Same as Alternative C

¹Overmature high elevation conifer refers to stands with canopy cover exceeding 40 percent. This classification is not the same as old growth, although the two classifications may coincide in some situations.

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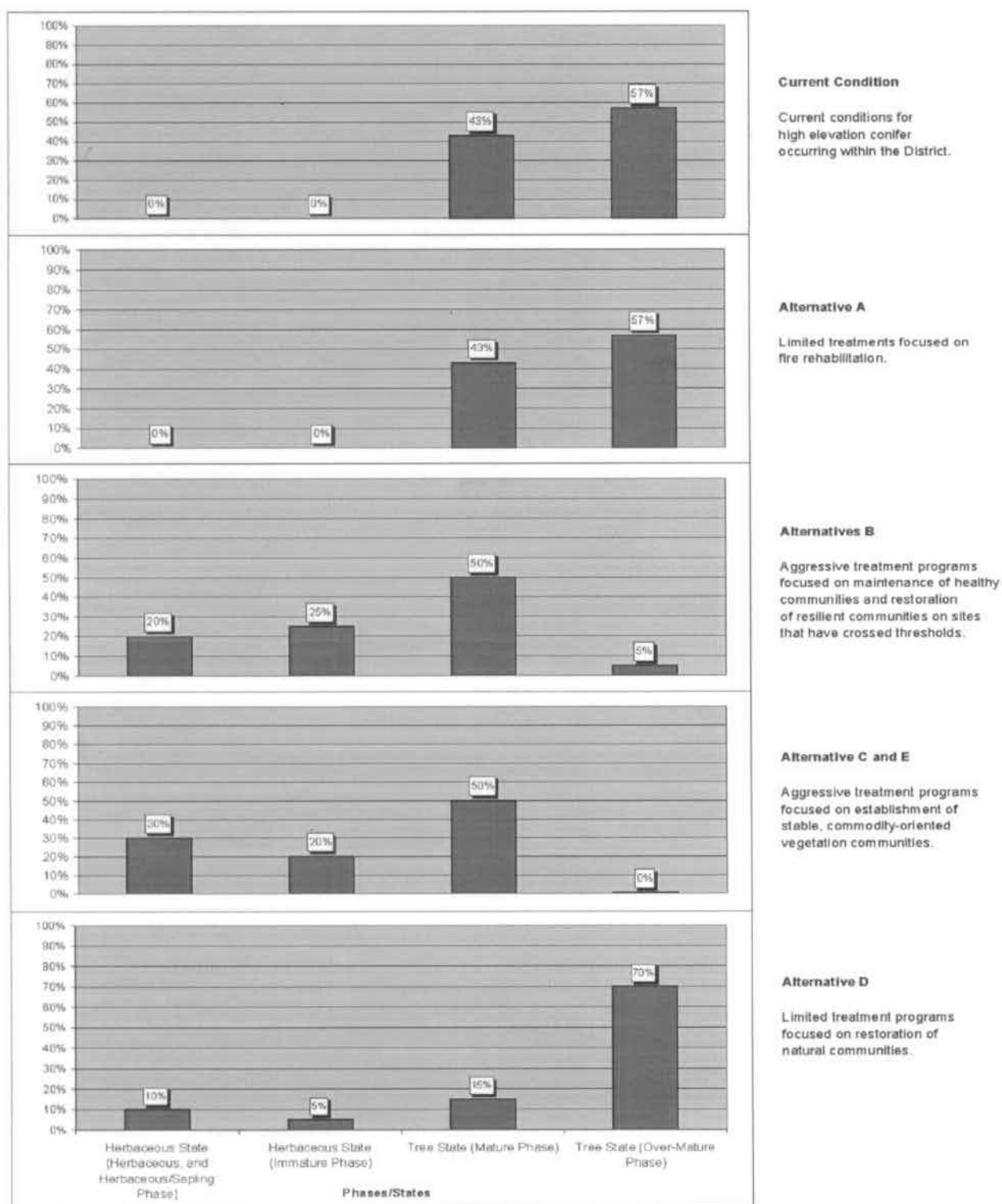


Figure 2.5-3. Desired Range of Conditions for High Elevation Conifer Under Various Alternatives

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Canopy cover and phases listed in **Table 2.5-3** are general descriptions and should be used in conjunction with characteristics described below to determine the desired ranges of conditions. Specific forestland site descriptions as determined by soil and site potential also should be consulted for site-specific objectives.

Overstory tree canopy cover of most high elevation conifer sites would be less than 40 percent (less than 30 percent for ponderosa pine). Appropriate tree species would be regenerating, and there would be a diverse tree size and age class distribution. Stands would be relatively open, allowing understory species to occur within site potential. Understory composition would be vigorous and robust, and would contain approximately 40 percent perennial grasses, 25 percent forbs, and 35 percent shrubs. Invasive species would be absent or reducing in composition. Insect and diseases are within natural disturbance ranges.

Some general factors to assist with identifying high elevation conifer communities that are outside the range of desired conditions are as follows:

1. Tree canopy cover has increased across a threshold level, causing understory perennial grasses, forbs, and shrub composition to decrease to where they are rare or absent in the understory (in effect the understory is unable to regenerate itself following disturbance).
2. Conifer tree species begin dying due to competition, overcrowding, and extended fire return interval.
3. Tree density and fuel accumulation have reached the point of promoting fires that are larger and more likely to crown than ordinarily would be expected.
4. Cheatgrass and other annual grasses and forbs (e.g., mustards) are present or dominate the understory community.
5. One or more of the weeds that are on the Nevada state noxious weed list, or an invasive weed that is highly competitive dominates the understory, competitively excluding the native perennial species.

General old-growth definitions for high elevation mixed conifer stands listed below are intended to present general guidelines and characteristics. Rationale and criteria used to determine, identify, and protect old-growth conditions would be documented at the site-specific level.

Mixed-conifer (i.e., fir, spruce, limber and bristlecone pine) old-growth characteristics include twisted trunks or branches with flat tops (mostly limber and bristlecone pines), trunks that are partially dead, and large diameter at breast height (e.g., spruce greater than 15 inches, bristlecone pine greater than 10 inches, limber pine greater than 16 inches, fir greater than 18 inches). Old-growth ponderosa pine characteristics include yellow bark and diameter at breast height greater than 16 inches (U.S. Forest Service 1993).

Alternative A

Management actions would focus on introducing fire into high elevation conifer sites through wildland fire management or use of prescribed fire. Priority treatment areas would be ponderosa pine sites. Wood

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product collection would be restricted for all high elevation conifer species. Passive type treatments (i.e., rehabilitation of burned areas) would be the main focus for treatments in most high elevation conifer sites. The most common treatment tool would be fire.

Comparison of data within the Current Conditions and Alternative A rows of **Table 2.5-3** indicates that approximately 9,600 acres (\$2,000 – 22,400) or 17 percent of the area occupied by this type would have to be treated and the remaining 83 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative A.

Alternative B

Management efforts would focus on preventative rather than remedial actions (i.e., treatments would occur before these areas cross thresholds into undesired phases or before invasive species become established). Uses would be managed to maintain areas within desired phases, while treatments or uses would be applied to direct undesired states and phases toward desired states and phases. Wildlife habitat requirements would be a priority for consideration of site-specific objectives.

Comparison of data within the Current Conditions and Alternative B rows of **Table 2.5-3** indicates that approximately 29,200 acres (32,000 – 2,800) or 52 percent of the area occupied by this type would have to be treated and the remaining 48 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative B.

Areas where tree overstory canopy is approaching threshold levels (i.e., self-thinning and understory is diminishing) would be first priority for treatment. Areas where overstory tree canopy cover and density have crossed a threshold, and are restricting understory growth would be next priority treatment areas. Most common tools used for treatments would include fire and mechanical methods. Herbicides also would be a common tool, especially in areas where invasive species occur. Land use restrictions or allowances (e.g., harvest and commercial thinning) would be implemented to achieve desired conditions.

Alternative C

In accessible sites, high elevation conifers would be managed for commodity products (e.g., biomass, timber, grazing). The majority of the accessible sites would be managed toward the mature or herbaceous phases as shown in **Table 2.5-3**. Inaccessible sites would be managed for other phases listed in **Table 2.5-3**.

Comparison of data within the Current Conditions and Alternative C rows of **Table 2.5-3** indicates that approximately 44,240 acres (\$4,000 – 11, 200]–\$2,000 – 560] or 79 percent of the area occupied by this type would have to be treated and the remaining 21 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative C.

Treatments would concentrate in areas where canopy cover has increased beyond 40 percent (Overmature Phase). Most common tools for treatment would consist of mechanical methods in accessible areas and fire in inaccessible areas. Herbicides also would be a common tool, especially in areas where invasive species

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occur. Treatment methods would emphasize use of commercial activities (e.g., grazing, selling biomass, etc.) to achieve desired range of conditions.

Alternative D

Natural processes would be allowed to occur within high elevation conifer sites. Management actions would primarily be passive in nature (i.e., treatments would occur after undesired phases or species are established). The desired range of conditions would be defined by natural processes with minimal influence from management and resource uses. Management actions within high elevation conifer areas would include elimination of invasive and nonnative species where they currently occur. Land uses would be managed to prevent further establishment and spread of invasive and nonnative species.

Comparison of data within the Current Conditions and Alternative D rows of **Table 2.5-3** indicates that approximately 28,000 acres ([24,000 – 8,400] + [2,000 – 19,600]) or 50 percent of the area occupied by this type would have to be treated and assume no change in the remaining 50 percent of the acreage to achieve the desired range of conditions identified for Alternative D.

Priority treatment would be in areas where invasive and nonnative species are present. Common tools to be used would include elimination or restriction of various resource uses and application of herbicides other than sulfonylurea herbicides, other acetolactate synthesis inhibiting herbicides, and herbicides with adverse effects on aquatic species. Natural disturbances (e.g., wildfire) would be rehabilitated to prevent establishment of invasive species.

Alternative E

Same as Alternative C.

2.5.5.4 Parameter – Salt Desert Shrub

Parameter Description

Approximately 1,221,000 acres of salt desert shrub communities exist within the Ely District, primarily within the low elevation valley areas. Winterfat communities comprise approximately 537,000 acres (44 percent), while shadscale and other salt tolerant species comprise approximately 684,000 acres (56 percent). The total salt desert shrub community is approximately 11 percent of all vegetation communities in the planning area.

Desired Range of Conditions for Salt Desert Shrub

The desired range of conditions are generally considered both the shrub state and herbaceous state of the state and transition models (Appendix D), which can be generally defined as the plant community being co-dominated or dominated by perennial salt desert shrubs with perennial forbs and varying amounts of deep-rooted perennial grasses. Generally saltbush or winterfat would dominate the plant community

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depending on ecological site potential. Various states of a vegetation community are needed to provide the composition and structure supporting wildlife species that use salt desert shrub habitat.

There are basically four states of the general state and transition model: herbaceous state, shrub state, annual invasive and/or exotic state, and nonnative perennial seeded states. The herbaceous state is co-dominated by salt desert shrubs and robust herbaceous understory. The shrub state is dominated by salt desert shrubs with perennial bunchgrasses in the understory. The annual invasive state is dominated by exotic forbs (halogeton) and/or invasive annuals (cheatgrass). The nonnative perennial seeded state is one dominated by perennial adapted herbaceous species planted to restore the annual invasive state.

Management actions would direct salt desert shrub communities toward the distribution of states shown in Table 2.5-4 and illustrated in Figure 2.5-4 for the various alternatives.

Table 2.5-4
Desired Range of Conditions of Salt Desert Shrub (Distribution of Phases and States)
for Various Alternatives

Habitat Type	Herbaceous State	Shrub State	Annual Invasive/Exotic State	Perennial Nonnative Seeded State
Current Conditions	18% (219,800 acres)	64% (781,400 acres)	18% (219,800 acres)	0% (0 acres)
Alternative				
Alternative A	18% (219,800 acres)	64% (781,400 acres)	0% (0 acres)	18% (219,800 acres)
Alternative B	18% (219,800 acres)	64% (781,400 acres)	0% (0 acres)	18% (219,800 acres)
Alternative C	32% (390,700 acres)	50% (610,500 acres)	0% (0 acres)	18% (219,800 acres)
Alternative D	18% (219,800 acres)	64% (781,400 acres)	0% (0 acres)	18% (219,800 acres)
Alternative E	Same as Alternative B	Same as Alternative B	Same as Alternative B	Same as Alternative B

Some general factors to identify when the salt desert shrub communities are no longer within the acceptable desired range of conditions include:

1. Shrub composition has increased and perennial herbaceous understory composition has decreased across a threshold level such that perennial bunchgrasses are absent in the understory.
2. Cheatgrass and other invasive grasses and forbs (e.g., halogeton) dominate the herbaceous understory community.
3. One or more of the weeds that are on the Nevada state noxious weed list, or an invasive weed that is highly competitive but still unknown, dominates the vegetation, competitively excluding the native perennial plants.

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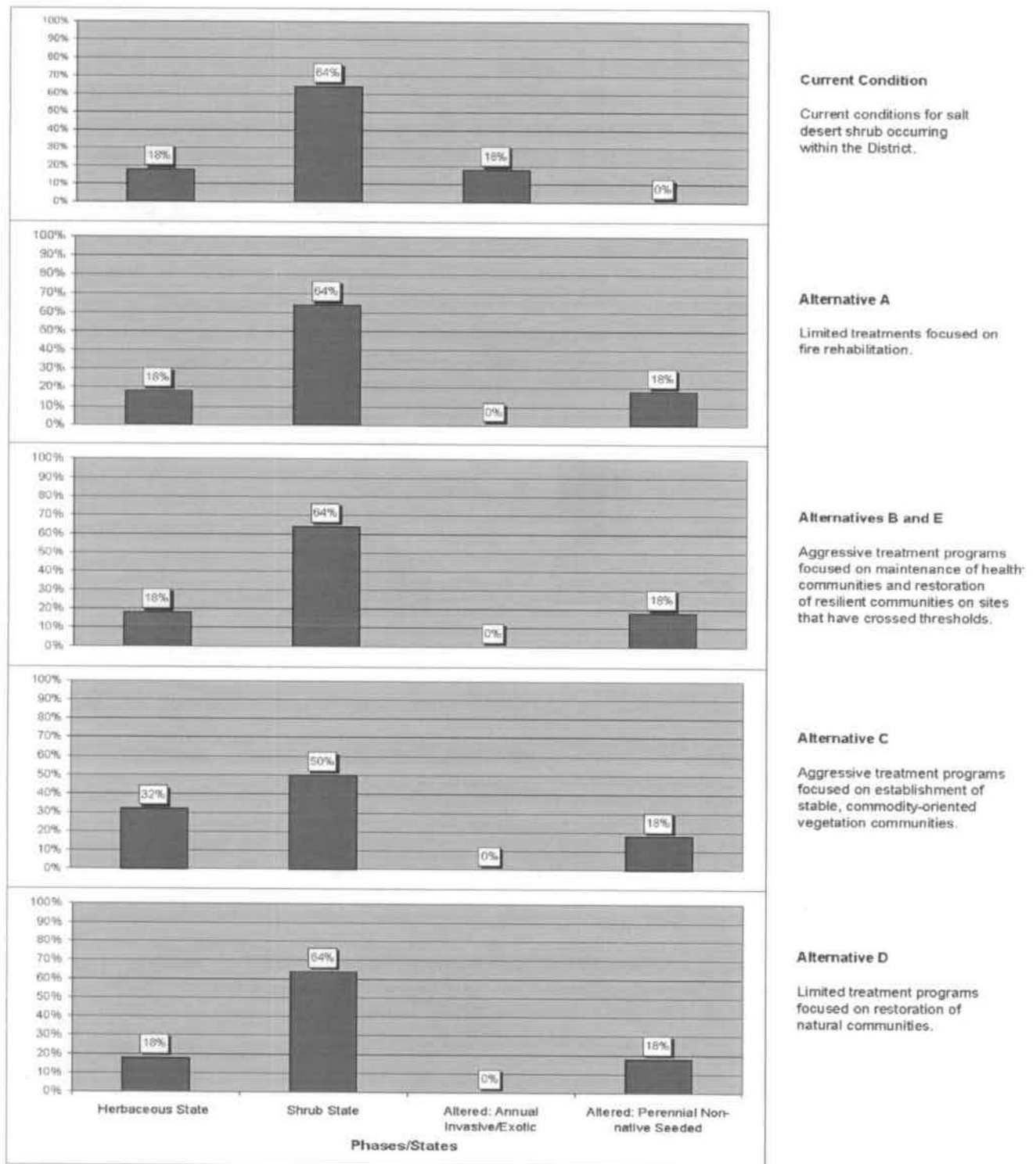


Figure 2.5-4. Desired Range of Conditions for Salt Desert Shrub Under Various Alternatives

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Alternative A

Salt desert shrub habitat invaded with exotic species (e.g., halogeton and cheatgrass) would be treated and restored on a mid-scale basis (watershed level). Treatments could necessitate the use of herbicide on invasive species. Fire would not be considered a useful tool to use in this vegetation type.

Comparison of data within the Current Conditions and Alternative A rows of **Table 2.5-4** indicates that approximately 219,800 acres (219,800 – 0) or 18 percent of the area occupied by this type would have to be treated and the remaining 82 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative A.

Alternative B

Management would strive to achieve plant composition within the desired range of conditions as shown in **Table 2.5-4** and **Figure 2.5-4**. The most common tools to be used to facilitate the desired range of conditions would include mechanical and herbicide treatments. Management would be to maintain current mosaics and connectivity of salt desert shrub communities while simultaneously restoring areas invaded by exotic species (e.g., halogeton and cheatgrass) on a mid-scale basis (watershed level). Fire would not be considered a useful tool to use in this vegetation type. Passive management action (e.g., change in season of use or type of livestock) would be emphasized as a means of treatment in these vegetation communities except in the annual invasive/exotic states where this is not effective.

Any seeding necessary for restoration or rehabilitation purposes would be implemented using appropriate mixes of adapted perennial species. Seed mixes would be determined on a site-specific basis dependent on the probability of successful establishment. Preference would be to use native and adaptive species that would compete with annual invasive species.

The annual invasive/exotic state would be a high priority and actively rehabilitated using adapted perennial species which would lead to future restoration opportunities. Objectives for rehabilitation would be to stabilize soil surfaces to reduce erosion and minimize establishment of annual invasive species. This also would necessitate the use of temporary fencing and closure to livestock.

Comparison of data within the Current Conditions and Alternative B rows of **Table 2.5-4** indicates that approximately 219,800 acres (219,800 – 0) or 18 percent of the area occupied by this type would have to be treated and the remaining 82 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative B.

Alternative C

Management would strive to achieve the desired range of conditions shown in **Table 2.5-4**. The overall goal of this alternative would be to emphasize herbaceous production in plant and animal community health at the landscape level. Management priority would be to enhance commodity production including forage for livestock and habitat requirements for game species, especially habitat required for special status and/or

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threatened and endangered species as mandated. Management would be to maintain diverse mosaics and connectivity of saltbush between geographic areas at mid and fine scales (watershed and allotment/project).

The annual invasive/exotic state would be a high priority for active rehabilitation using adapted perennial species which would lead to future restoration opportunities. Objectives for rehabilitation would be to stabilize soil surfaces to reduce erosion, minimize establishment of annual invasive species, and provide additional forage for livestock. This also would necessitate the use of temporary fencing and closure to livestock in the short-term.

Any seeding necessary for restoration or rehabilitation purposes would be implemented using appropriate mixes of desired species adapted to the site. Seed mixes would be determined on a site-specific basis dependent on the probability of successful establishment. Preference would be to use native and adapted species that can compete with annual invasive species.

Comparison of data within the Current Conditions and Alternative C rows of **Table 2.5-4** indicates that approximately 390,700 acres (781,400 - 610,500) or 32 percent of the area occupied by this type would have to be treated and the remaining 68 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative C.

The most common tools to be used to facilitate the desired range of conditions would include mechanical and herbicide treatments. Fire would not be considered a useful tool to use in this vegetation type. Passive management action (e.g., change in seasonal use or type of livestock) would be emphasized as a mean of treatment in these vegetation communities except in the annual invasive/exotic states where this is not effective.

Alternative D

Management would strive to protect existing native salt desert shrub communities and to prevent invasions of exotic species. As indicated in **Table 2.5-4**, management activities in this alternative would focus on treating areas dominated by invasive species in the understory.

Comparison of data within the Current Conditions and Alternative D rows of **Table 2.5-4** indicates that approximately 219,800 acres (219,800 - 0) or 18 percent of the area occupied by this type would have to be treated and assume no change in the remaining 82 percent of the acreage to achieve the desired range of conditions identified for Alternative D.

Herbicide use would be restricted to avoid use of sulfonylurea herbicides, other acetolactate synthesis inhibiting herbicides, and herbicides with adverse effects on aquatic species.

Alternative E

Same as Alternative B.

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2.5.5.5 Parameter – Sagebrush (basin big sagebrush, Wyoming big sagebrush, mountain big sagebrush and black sagebrush)

Parameter Description

Sagebrush communities exist throughout most of the District from low elevation valleys and benches to high elevation mountains. Wyoming big, basin big, and black sagebrush mostly occur in lower and mid elevation ranges along the benches and valley areas while low and mountain big sagebrush occur at the higher elevations.

Approximately 5,619,500 acres of sagebrush exist within the Ely District. The overall sagebrush type includes approximately 2,842,800 acres (51 percent) of Wyoming big sagebrush communities (including small areas of basin big sagebrush), 450,800 acres of mountain big sagebrush (8 percent), and 2,325,900 acres (41 percent) of black sagebrush communities. The total sagebrush type covers approximately 49 percent of the planning area.

Description of Desired Range of Conditions for Sagebrush

The desired range of conditions is generally considered the herbaceous state and early shrub state of the state and transition models (Appendix D), which can be generally defined as a plant community dominated by deep-rooted perennial bunchgrasses, with perennial forbs and varying amounts of sagebrush. Sagebrush can dominate the plant community in this state as long as the understory remains robust and resilient. However, some areas have transitioned into the shrub state, which is not resilient after fire but provides valuable sagebrush habitat until it eventually burns. Various states of ecological sites are needed to provide the composition and structure for supporting various life stages of sage grouse and the diversity of other wildlife species that use sagebrush habitat. Sagebrush is desired for wildlife habitat within the perennial herbaceous state. However, transitioning to the shrub or tree state represents a loss of resilience and, therefore, eventually a loss of sagebrush because of increased risk of fire or other disturbance.

The desired range of conditions does not imply that the entire sagebrush landscape would be distributed in the herbaceous state or early shrub state at any point in time. It does explain the overall mosaic of phases and the direction sagebrush communities would be moving toward, if current conditions are outside the desired percentages. For example, if the goal is to retain an herbaceous state, the sagebrush could be in the early herbaceous phase for some time after treatment, but uses would be managed to allow the sagebrush to move toward the shrub state through time. Management actions would direct sagebrush communities toward the distribution of states shown in **Table 2.5-5** and illustrated in **Figure 2.5-5** for the various alternatives. For Alternative D, the amount of sagebrush occurring in each phase would be primarily determined by natural disturbances. The mixture of untreated areas with treatment areas of different ages at an appropriate scale in time and space is expected to provide the desirable mosaic of community composition and structure important for wildlife habitat and other uses.

Table 2.5-5
Desired Range of Conditions of Sagebrush (Distribution of Phases and States)
for Various Alternatives

State/Phase Name	Total Herbaceous State	Total Shrub State	Total Tree State	Annual/Perennial Invasive State	Nonnative Perennial Seeded State
Current Conditions	18% (1,011,500 acres)	54% (3,034,500 acres)	17% (955,300 acres)	9% (505,800 acres)	2% (112,400 acres)
Alternative					
Alternative A	35% (1,966,800 acres)	55% (3,090,700 acres)	2% (112,400 acres)	0% (0 acres)	8% (449,600 acres)
Alternative B	72% (4,046,000 acres)	22% (1,236,300 acres)	3% (168,600 acres)	0% (0 acres)	3% (168,600 acres)
Alternative C	45% (2,528,800 acres)	5% (281,000 acres)	0% (0 acres)	0% (0 acres)	50% (2,809,800 acres)
Alternative D	17% (955,300 acres)	40% (2,247,800 acres)	43% (2,416,400 acres)	0% (0 acres)	0% (0 acres)
Alternative E	Same as Alternative B	Same as Alternative B	Same as Alternative B	Same as Alternative B	Same as Alternative B

Table 2.5-6 is a synopsis of the vegetation states and phases for sagebrush in the Ely District. The table also discusses the phases (early, mid, and late) that can be present in the perennial herbaceous state and the shrub or tree state relative to sagebrush canopy cover. A threshold occurs between states where a new array of perennial native species have become established and canopy cover has increased because of the lack of disturbance. The exact determination of a threshold varies with each ecological site, but it is generally understood that the canopy cover is increasing and the composition of understory vegetation species is being reduced due to the lack of disturbance or unbalanced disturbances within the site. Once a threshold has been crossed and the vegetation has changed, seed sources for the previous dominant perennial species are commonly absent or depleted, and it is very rare that the state of the ecological site will return to the original community or state even after a disturbance. More commonly, the vegetation community is replaced by nonnative plants or by annual invasive and noxious weeds.

Some general factors that identify when sagebrush communities are no longer within the acceptable desired range of condition (i.e., herbaceous state) are as follows:

1. Shrub canopy cover has increased across a threshold level and perennial herbaceous understory has decreased to rare or absent and this means there is no viable seed source present.
2. Uniper or pinyon pine has invaded a site causing the understory (shrubs and perennial herbaceous plants) to become rare or absent.
3. Invasive and noxious weeds dominate the herbaceous understory.

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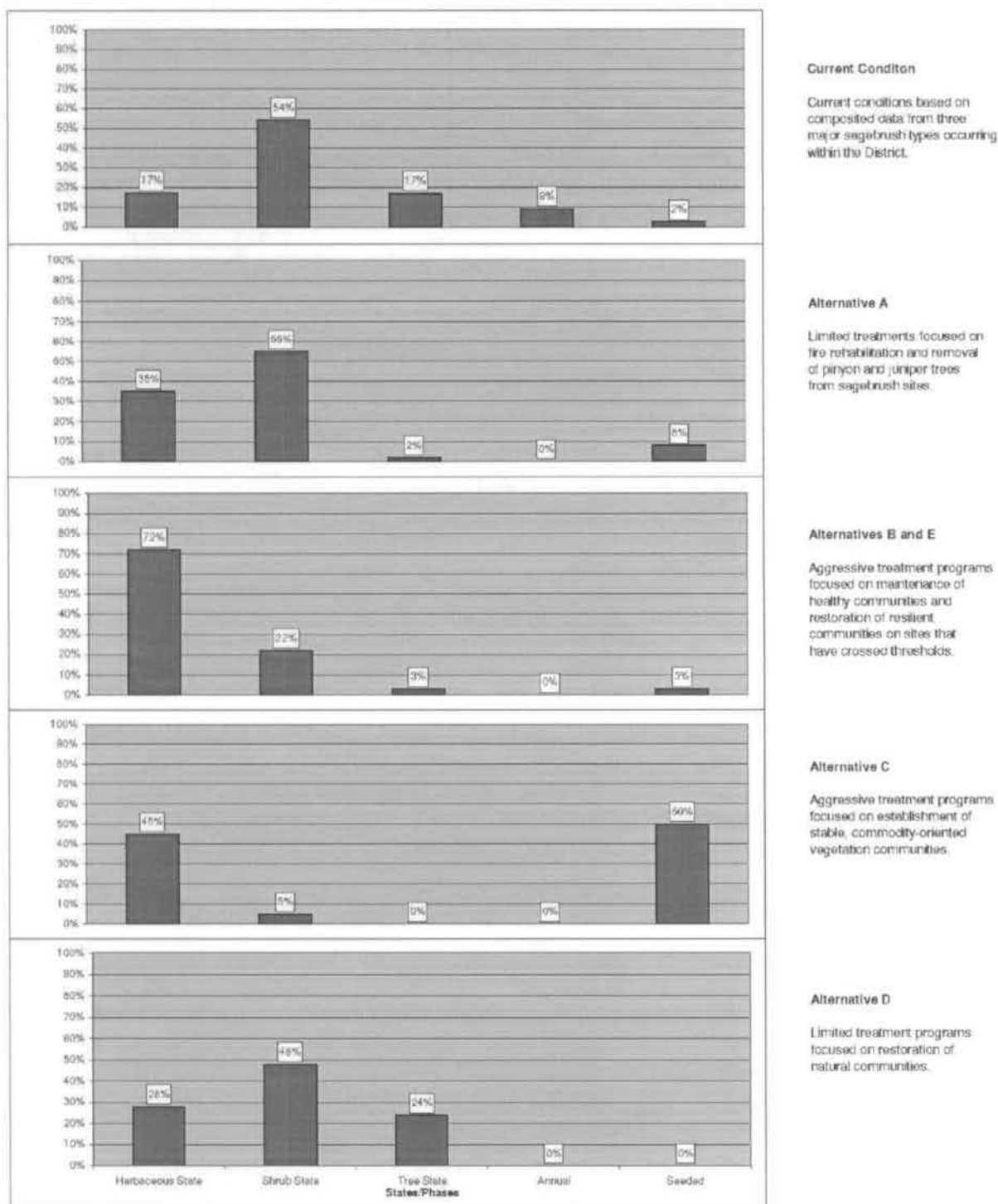


Figure 2.5-5. Desired Range of Conditions for Sagebrush Under Various Alternatives

Table 2.5-6
Vegetation States and Phases for Sagebrush in the Ely District
(canopy cover percentages are approximate and not absolute)

HERBACEOUS STATE (H):

Early Phase 0% sagebrush canopy cover

(Site is occupied by perennial mostly native grasses and forbs.)

Early H(A): 0% sagebrush canopy cover

HERBACEOUS STATE:

Mid Phase Trace to 5% sagebrush canopy cover

(Sagebrush is present but understory is occupied predominately by perennial mostly native grasses and forbs.)

Mid H(A): Trace to 5% sagebrush canopy cover

Mid/Late Phase 5 to 25% sagebrush canopy cover

(Sagebrush is increasing, as is the herbaceous understory.)

Mid/Late H(A): (Wyoming sage) 5 to 15% sagebrush canopy cover

Mid/Late H(B): (basin and mountain big sage) 10 to 20% sagebrush canopy

Mid/Late H(C): (basin and mountain big sage) 15 to 25% sagebrush canopy cover

Late Phase 15 to 35% sagebrush canopy cover

(Sagebrush is increasing to the point of threshold and has substantially reduced the herbaceous understory.)

Late H(A): 15 to 35% sagebrush canopy cover

SHRUB STATE (S):

(The plant community is dominated by shrubs, and the herbaceous perennial understory is lost or has become so weak that it cannot recover quickly after a fire to reoccupy the site.)

Early Phase 15 to 35% sagebrush canopy cover

(Plant community is dominated by sagebrush and other shrubs.)

Early S(A) (Wyoming sage) 15 to 25% sagebrush canopy cover

Early S(B) (basin and mountain big sage) 25 to 35% sagebrush canopy cover

Mid/Late Phase 20% sagebrush canopy cover

(Plant community is dominated by shrubs, and there is insufficient perennial herbaceous vegetation to be released by wildfire. However pinyon and juniper trees or invasive weeds also have become established.)

Mid S(A) (Wyoming sage) 20% sagebrush canopy cover

Mid S(B) (basin and mountain big sage) 35% sagebrush canopy cover

Late Phase 5 to 20% sagebrush canopy cover

(Sagebrush canopy is decreasing due to establishment of pinyon and juniper trees.)

Late S(A) (Wyoming sage) 5 to 15% sagebrush canopy cover

Late S(B) (basin and mountain big sage) 10 to 20% sagebrush canopy cover

TREE STATE (T):

Mid/Late Phase (Plant community is dominated by pinyon pine and juniper trees that have eliminated or virtually eliminated the perennial herbaceous understory.)

Mid/Late T(A): 0 to 5% sagebrush canopy cover

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Table 2.5-6 (Continued)

TREE STATE:

(The plant community is dominated by pinyon pine and juniper trees. These trees have diminished the understory of perennial herbaceous species so that after a wildfire, the herbaceous remnants, if any, will not reoccupy the site.)

Early Phase (Pinyon-juniper canopy is increasing and most of the trees are in the mature condition class. Some of the shrubs and herbaceous perennials remain intact.)

Early T(A): 5 to 15% sagebrush canopy cover

ANNUAL INVASIVE GRASS STATE AND PERENNIAL INVASIVE WEED STATE

(Community is dominated by cheatgrass, red brome, medusahead rye, annual mustards, or perennial invasive weeds such as those on the state's noxious weed list.)

NONNATIVE PERENNIAL SEEDED STATE

(This state may be a by-product of historic rangeland management emphasis for reducing or eradicating native sagebrush canopy through mechanical chaining, burning, or herbicide application and subsequent planting of nonnative grasses (predominantly crested wheatgrass) to create productive livestock use areas. In other areas, this state is selected as an alternative to annual invasive grasses when a shrub state or tree state burns.

Early/Mid Phase 0 to 5% sagebrush canopy cover

Mid Phase 5 to 15% sagebrush canopy cover

Late Phase 15 to 35% sagebrush canopy cover

Alternative A

Approximately 4.3 million acres would be maintained in the herbaceous, shrub, tree, and seeding states. Treatments would be applied in areas where pinyon or juniper have increased in approximately 1.3 million acres of sagebrush community (20 percent). Native range or seedings would be managed to meet shrub cover needs on some big game winter ranges. In other instances, the presence of special status species would be used as rationale for meeting the desired range of conditions. Fire use would increase in this alternative and seeding of burned areas would increase to prevent infestation of annual invasive and noxious weeds and to prevent soil erosion. Treatment of noxious weeds would be by herbicides.

Comparison of data within the Current Conditions and Alternative A rows of **Table 2.5-5** indicates that approximately 1,348,700 acres (855,300 – 112,400]–605,800 – 0] or 24 percent of the area occupied by this type would have to be treated and the remaining 76 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative A.

Any seeding necessary to achieve site-specific objectives would be implemented using appropriate mixes of desired species and application of herbicides. Species mixes would be determined on a site-specific basis dependant on the probability of successful establishment. A mixture of native and desirable nonnative species could be used. To achieve the desired range of conditions, management would include a variety of

methods to increase or decrease sagebrush overstory. Implementation would be limited to the fine scale (allotments/projects) to accomplish specific goals and objectives for dependent wildlife species, such as sage grouse.

Alternative B

Management would strive to achieve plant composition within the desired range of conditions for sagebrush communities. To achieve desired conditions, management would include a variety of methods to increase or decrease sagebrush overstory. This effort would focus on establishing and maintaining the desired herbaceous state or early shrub state where sagebrush is present along with a robust understory of perennial species. Treatments would be prioritized toward restoration of sagebrush communities on benches with deeper soils and higher precipitation.

Comparison of data within the Current Conditions and Alternative B rows of **Table 2.5-5** indicates that approximately 3,090,700 acres ($[0,034,500 - 1,236,300] + [55,300 - 168,600] + [05,800 - 0]$) or 55 percent of the area occupied by this type would have to be treated and the remaining 45 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative B.

Treatments would be applied where necessary to attain the distribution of vegetation states shown in **Table 2.5-5** over the long term. The third chart in **Figure 2.5-5** illustrates the percentages of the sagebrush community (left axis) in the described states (lower axis) that are expected to result over a period of 50 to 100 years.

Native range or seedings would be managed to meet the requirements of game and non-game species. Management would focus on maintaining or establishing diversity, mosaics, and connectivity of sagebrush between geographic areas at the middle and fine scales. The overall goal of this alternative would be to emphasize plant and animal community health at the mid scale (watershed level). The preferred tools for reducing sagebrush cover would be mechanical in lower elevations and prescribed burning in higher elevations. Herbicides also would be a common tool and would be the preferred tool for controlling invasive and noxious weeds. Seeding would be used where the understory is not sufficient for re-establishment.

Any seeding necessary for restoration or rehabilitation purposes would be implemented using appropriate mixes of desired species adapted to the site. Seed mixes would be determined on a site-specific basis dependent on the probability of successful establishment. Preference would be to use native species that would compete with annual invasive species, however, nonnative species would be used where appropriate to reduce the potential for establishment of annual invasive species.

Alternative C

Management would focus on achieving high productivity of commodity values while maintaining and enhancing ecological health and resilience. Under this alternative, emphasis would be on establishment and maintenance of the herbaceous state or seedings to increase forage production.

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The preferred tools for reducing sagebrush cover would be mechanical in lower elevations and prescribed burning in higher elevations. Seeding would be used where the understory is not sufficient for re-establishment.

Comparison of data within the Current Conditions and Alternative C rows of **Table 2.5-5** indicates that approximately 4,214,600 acres ($[0,034,500 - 281,000] + [955,300 - 0] + [0,005,800 - 0]$) or 75 percent of the area occupied by this type would have to be treated and the remaining 25 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative C.

Treatments would be applied where necessary to attain the distribution of vegetation states shown in **Table 2.5-5** over the long term. The fourth chart in **Figure 2.5-5** illustrates the percentages of the sagebrush community (left axis) in the described states (lower axis) that are expected to result over a period of 50 to 100 years. Common tools for treatment would include herbicides, mechanical methods, and prescribed fire.

The overall goal of this alternative would be to maximize sustainable commodity production within the plant community at the mid scale (watershed level) and fine scale (allotment/project), while providing habitat requirements of game species and special status and/or threatened and endangered species as mandated. Thus, the alternative would emphasize herbaceous production in healthy plant communities at the landscape level. To achieve the desired range of conditions, management would include a variety of methods to increase or decrease sagebrush overstory.

Any seeding necessary for restoration or rehabilitation purposes would be implemented using appropriate mixes of desired species adapted to the site. Seed mixes would be determined on a site-specific basis dependent on the probability of successful establishment. Herbicides would be the preferred tool for controlling invasive and noxious weeds. Preference would be to use native species that would compete with annual invasive species.

Alternative D

Management emphasis would be on protecting existing native sagebrush communities and preventing invasions of annual exotic species. Sagebrush communities would be allowed to function as naturally as possible with minimal influence from management or resource uses. Sagebrush areas that have been seeded with nonnative understory species (e.g., crested wheatgrass) would be returned to native species.

Comparison of data within the Current Conditions and Alternative D rows of **Table 2.5-5** indicates that approximately 1,461,100 acres ($[1,011,500 - 955,300] + [0,034,500 - 2,247,800] + [0,005,800 - 0] + [0,12,400 - 0]$) or 26 percent of the area occupied by this type would have to be treated and assume no change in the remaining 74 percent of the acreage to achieve the desired range of conditions identified for Alternative D.

Areas with good perennial understory or that are near the limits of the desired range of conditions would be maintained by applying treatments. Wild fires would occur in this alternative and burned areas would be stabilized and rehabilitated to reduce invasive and noxious weed infestations. Invasive and noxious weed areas would receive chemical treatments to reduce or eliminate the threat of spreading. The overall goal of

this alternative would be to reestablish native vegetation within the plant community at the mid scale (watershed level). Herbicides to reduce or eliminate annual invasive and noxious weeds would not include sulfonyleurea herbicides, other acetolactate synthesis inhibiting herbicides, and herbicides with adverse effects on aquatic species.

Alternative E

Same as Alternative B.

2.5.5.6 Parameter – Mountain Mahogany

Parameter Description

Approximately 46,000 acres of mountain mahogany exist within the Ely District. Mountain mahogany ecological sites occur in, and are associated with, the mountain shrub community with annual precipitation of 14 inches or greater. Mountain mahogany communities comprise approximately 0.5 percent of the total vegetation communities in the planning area.

Desired Range of Conditions for Mountain Mahogany

The desired range of conditions listed in **Table 2.5-7** represents the desired percentages of each vegetation state and phase based on management goals of the alternative. A variation of 5 percent above or below the values in **Table 2.5-7** would be allowed.

Desired range of conditions for mountain mahogany communities would vary depending on site dynamics (i.e., thicket or savanna). Thicket sites would have higher cover and composition of mountain mahogany on the site compared to savanna sites. The composition of understory species (e.g., mountain big sagebrush and perennial grasses) is inversely related to overstory canopy cover. To maintain appropriate and desirable understory species, and to maintain resiliency to disturbance, shrub and tree-like canopy cover should not exceed 35 percent in savanna areas or 50 percent in thicket areas. Phases listed in **Table 2.5-7** and shown on **Figure 2.5-6** mostly represent the savanna sites. Extrapolation would be applied for thicket sites. The following additional characteristics also should be present in the sites:

- Understory species are dominated by deep-rooted perennial bunchgrasses with native forbs and varying amounts of mountain big sagebrush.
- Mountain shrubs could dominate the plant community as long as the understory remains robust.
- Various ranges of canopy cover, plant structure and ages, and understory composition would occur throughout the landscape without exceeding canopy cover percentages listed above.
- Mountain mahogany occurs in various patch sizes and shapes to provide forage and cover for wildlife.

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Table 2.5-7
Desired Range of Conditions of Mountain Mahogany (Distribution of Phases and States)
for Various Alternatives

State and Phase	Herbaceous State (Herbaceous Phase)	Herbaceous State (Shrub Phase-herbaceous dominant with shrubs re-establishing)	Shrub State (Shrub/Herbaceous Phase)	Shrub State (Shrub Phase)	Shrub/Tree-like State (No Understory Phase) ¹
Canopy Description	0-5% mahogany canopy cover	5-15% mahogany canopy cover	15-25% mahogany canopy cover (desired mix of herbaceous and shrub species in understory)	25-35% mahogany canopy cover (approaching threshold with no understory)	35% mahogany cover (shrub/tree-like and tree dominant)
Current Conditions	0% (0 acres)	0% (0 acres)	5% (2,300 acres)	42% (19,300 acres)	53% (24,400 acres)
Alternative					
Alternative A	5% (2,300 acres)	5% (2,300 acres)	10% (4,600 acres)	40% (18,400 acres)	40% (18,400 acres)
Alternative B	5% (460 acres)	20% (9,200 acres)	30% (13,800 acres)	40% (18,400 acres)	5% (2,300 acres)
Alternative C	35% (16,100 acres)	30% (13,800 acres)	20% (9,200 acres)	15% (6,900 acres)	4% (460 acres)
Alternative D	20% (9,200 acres)	20% (9,200 acres)	20% (9,200 acres)	10% (4,600 acres)	30% (13,800 acres)
Alternative E	Same as Alternative B	Same as Alternative B	Same as Alternative B	Same as Alternative B	Same as Alternative B

¹Refers to savanna sites.

Some general factors to identify when mountain mahogany communities are no longer within ranges that are resistant and resilient to disturbance include:

1. Tree-like shrub cover has increased across a threshold level, causing perennial herbaceous and sagebrush understory composition to decrease across a threshold level, resulting in a decrease in perennial herbaceous and sagebrush understory composition across a threshold level to the extent that perennial bunchgrasses and sagebrush are rare or absent in the understory.
2. Uniper or pinyon pine has invaded a site (due to extended fire return interval or other factors), causing understory (herbaceous and/or sagebrush) species to decrease to levels from which they cannot recover following a disturbance event such as fire.
3. Cheatgrass and other annual grasses and forbs (e.g., mustards) dominate the herbaceous community.
4. One or more of the weeds are on the Nevada state noxious weed list, or a highly competitive unknown invasive weed dominates the herbaceous vegetation, competitively excluding the native perennial herbaceous dominants.

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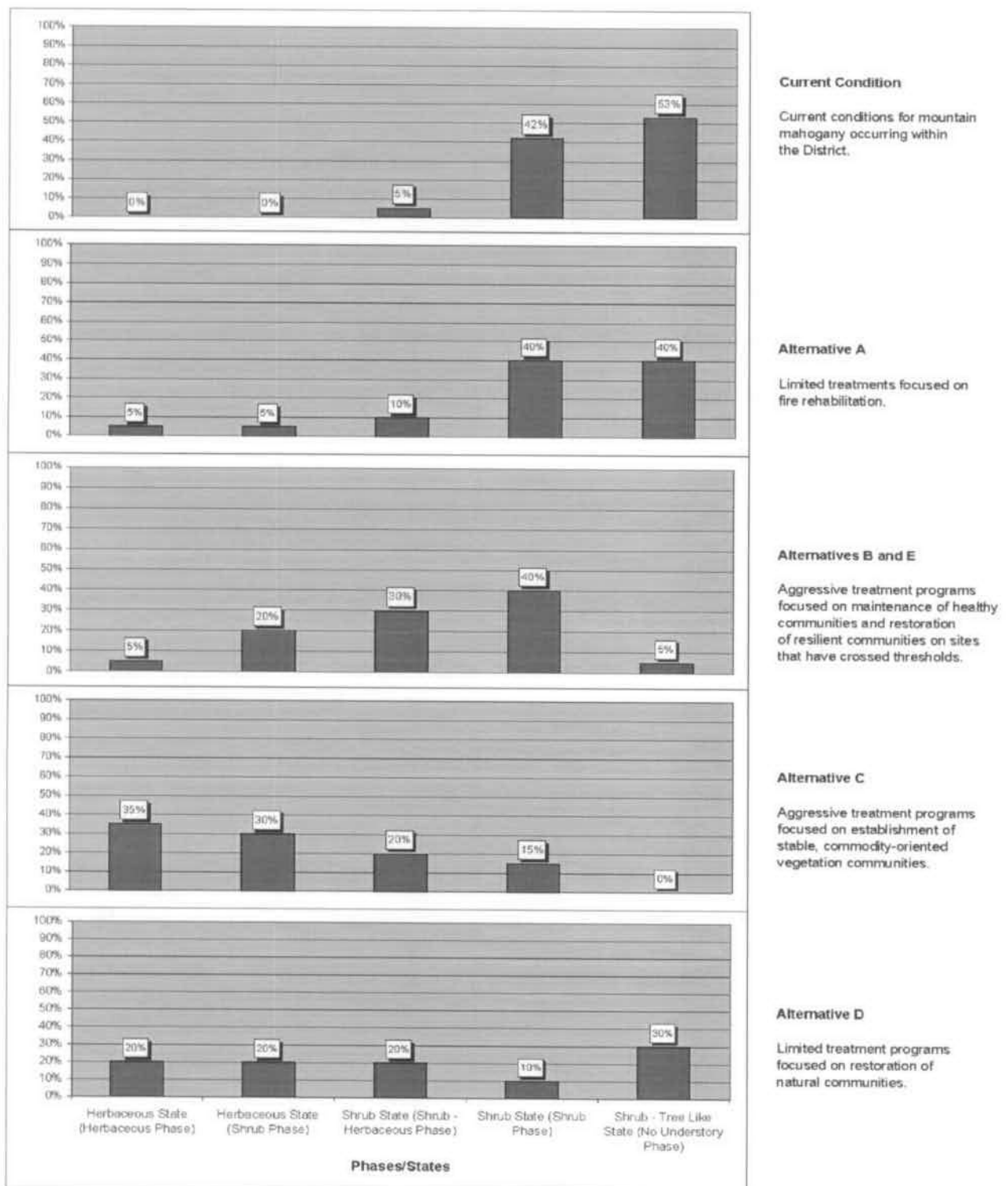


Figure 2.5-6. Desired Range of Conditions for Mountain Mahogany Under Various Alternatives

2.0 ALTERNATIVES

Alternative A

This alternative includes minimal direction for mountain mahogany site management. These sites would continue to be managed similar to the associated or surrounding sagebrush communities. Fuelwood collection would be allowed in mountain mahogany areas that are reaching threshold canopy cover values.

Comparison of data within the Current Conditions and Alternative A rows of **Table 2.5-7** indicates that approximately 6,900 acres ([9,300 – 18,400] + 24,400 – 18,400) or 15 percent of the area occupied by this type would have to be treated and the remaining 85 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative A.

Fuelwood cutting would continue in sites where canopy cover is exceeding ranges listed above. Prescribed fire and wildland fire use would be allowed in some mountain mahogany sites.

Alternative B

The overall goal of this alternative would be to emphasize plant and animal community health at the watershed level (mid scale). Mountain mahogany sites would exhibit a mosaic of various phases throughout the landscape or watershed. Management actions would be proactive (i.e., treatments would occur before undesired phases or species become established). Management actions would maintain or enhance diversity, mosaics, and connectivity of the surrounding sagebrush communities between geographic areas at watershed (mid) and site-specific (fine) scales. Wildlife habitat requirements would receive the highest priority consideration when determining site-specific objectives in mountain mahogany sites.

Comparison of data within the Current Conditions and Alternative B rows of **Table 2.5-7** indicates that approximately 23,000 acres ([9,300 – 18,400] + 24,400 – 2,300) or 50 percent of the area occupied by this type would have to be treated and the remaining 50 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative B.

Areas with no understory and where canopy cover is near threshold level or exceeds percentages listed for the desired range of conditions above (i.e., shrub/tree-like dominant state) would be priorities for treatment. Treatments and land uses would be implemented to maintain or direct mountain mahogany communities toward the desired phases listed in **Table 2.5-7**. The most common tools that would be used to meet desired range of conditions would include prescribed fire and mechanical methods (e.g., woodcutting). Herbicides also would be a common treatment option, especially in areas where invasive species are present or where they have a high probability of becoming established.

Any seeding necessary for restoration or rehabilitation would be implemented using appropriate mixes of desired species adapted to the site. Seed mixes would be determined on a site-specific basis dependent on the probability of successful establishment. Preference would be to use native species that are adapted to the site and capable of competing with annual invasive species.

Alternative C

Mountain mahogany sites would be managed to achieve the phases with the greatest potential for commodity production (e.g., herbaceous state for livestock and big game forage). Management actions would maintain or direct mountain mahogany sites toward the ecological phases listed in **Table 2.5-7**. Wildlife habitat needs would receive the highest priority consideration in critical habitat areas only. The overall goal of this alternative would be to emphasize commodity production in accessible areas, while maintaining vegetation resiliency at the watershed scale.

Comparison of data within the Current Conditions and Alternative C rows of **Table 2.5-7** indicates that approximately 36,340 acres ([9,300 – 6,900] + [24,400 – 460]) or 79 percent of the area occupied by this type would have to be treated and the remaining 21 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative C.

Areas with diminishing understory (i.e., shrub/tree-like dominant state) and the presence of invasive species would be priority areas for treatment. The most common tools to be used to treat sites would include prescribed fire, mechanical (e.g., woodcutting), herbicides, and cultural (e.g., livestock grazing) methods. Herbicides would be a common treatment option, especially in areas where invasive species are present or have a high probability of becoming established. Emphasis would be placed on use of commercial activities (e.g., grazing and woodcutting) to achieve the desired range of conditions.

Any seeding necessary for restoration or rehabilitation would be implemented using appropriate mixes of desired species adapted to the site. Seed mixes would be determined on a site-specific basis dependent on the probability of successful establishment. Preference would be to use native species that are adapted to the site, capable of competing with annual invasive species, and capable of providing sustainable products for multiple uses.

Alternative D

Natural processes would be allowed to occur within mountain mahogany communities. Desired range of conditions would be defined by natural processes with minimal influence from management (**Table 2.5-7**). Management actions would primarily be passive (i.e., treatments would occur after undesired phases or species are established). Very limited land uses would be allowed. Management actions and treatments in mountain mahogany sites would include elimination of existing invasive and nonnative species. Mountain mahogany communities would be protected to prevent further establishment or expansion of invasive species.

Comparison of data within the Current Conditions and Alternative D rows of **Table 2.5-7** indicates that approximately 25,300 acres ([9,300 – 4,600] + [24,400 – 13,800]) or 55 percent of the area occupied by this type would have to be treated and assume no change in the remaining 45 percent of the acreage to achieve the desired range of conditions identified for Alternative D.

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Priority treatment areas would be in mahogany sites where invasive and nonnative species are present. Common tools would include elimination or restriction of discretionary uses and application of herbicides other than sulfonylurea herbicides, other acetolactate synthesis inhibiting herbicides, and herbicides with adverse effects on aquatic species. Natural disturbances (e.g., wildfire) would be allowed, but the disturbed area would be rehabilitated to prevent establishment of invasive species.

Only native species would be used for any seeding activities.

Alternative E

Same as Alternative B.

2.5.5.7 Parameter – Mojave Desert Vegetation

Parameter Description

Approximately 850,000 acres of Mojave Desert vegetation exist within the Ely District. Of this total, approximately 748,000 acres (88 percent) are comprised of two major vegetation types: blackbrush and creosotebush (382,500 acres or 45 percent of total) and creosotebush and bursage (365,500 acres or 43 percent of total). The remainder of the Mojave Desert type (102,000 acres or 12 percent) is comprised of salt desert shrub vegetation.

Desired Range of Conditions for Mojave Vegetation Types

The plant community would be dominated by native perennial shrubs with some annual or perennial forbs and varying amounts of perennial bunchgrasses. Small amounts (5 percent) of annual grasses could be present in the community, as long as they do not dominate the understory composition and displace native perennial shrubs, forbs, or grasses. This desired range of conditions arises from the Caliente MFP Amendment for management of the desert tortoise.

Some general factors that can be used to identify when Mojave Desert shrub communities are no longer within the desired range of conditions are as follows:

1. Shrub composition and cover are lost due to conversion to an annual plant community and perennial bunchgrasses have decreased across a threshold level (i.e., herbaceous composition 40 percent).
2. Annual invasive grasses and forbs dominate the herbaceous community.
3. One or more of the weeds that are on the Nevada state noxious weed list, or an invasive weed that is highly competitive but still unknown, could dominate the herbaceous vegetation, competitively excluding the native perennial herbaceous dominants.

The desired range of conditions would apply to all alternatives, unless otherwise stated in the discussion of individual alternatives. Actions for specific alternatives could manage toward the higher or lower end of

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herbaceous or woody species composition by weight, depending on the goal of the alternative. Ground cover would range from 10 to 30 percent in blackbrush communities with a general plant composition of approximately 10 percent grasses, 5 percent forbs, and 85 percent shrubs. About 5 percent of the blackbrush community would be in a herbaceous state caused mainly by wind-driven wildfire disturbances.

The creosotebush and bursage vegetation would consist of high densities of perennial and annual species, a high percentage of cover, and a high biomass of annual spring flora relative to the capabilities of ecological site potentials. These communities would have a ground cover of less than 10 percent with a general plant composition by weight of approximately 10 percent grasses, 10 percent forbs, and 80 percent shrubs.

The desired range of conditions for salt desert shrub are generally considered the herbaceous state and early shrub dominant state of the state and transition models (Appendix D). These states can be generally defined as a plant community that is dominated by salt desert shrubs with perennial forbs and varying amounts of deep-rooted perennial grasses. Saltbush can dominate the plant community in this state as long as the understory remains robust. Various states of a vegetation community are required to provide the composition and structure essential to the wildlife species that use salt desert shrub habitat, which in the Mojave Desert also includes desert tortoise.

Passive management action would be emphasized as a means of treatment in these vegetation communities. Management actions would primarily consist of regulating resource uses to mitigate impacts on desert tortoise. Land uses in areas of critical environmental concern would be regulated according to the Caliente MFP Amendment for management of the desert tortoise.

Fire would not be used as a common tool in the Mojave Desert vegetation community because of the potential for the site to become dominated by exotic invasive flammable species after fire disturbance. Herbicides may be used in restoration treatments.

Alternative A

Resource uses (e.g., livestock grazing) in the Mojave Desert areas would be managed to maintain or improve vegetation composition and protect critical desert tortoise habitat.

Alternative B

Same as Alternative A, except that livestock grazing would be eliminated on the remainder of the Mojave Desert, and all Mojave Desert vegetation (approximately 850,000 acres) would be protected from deterioration or conversion to annual invasive species by managing uses or applying treatments where appropriate.

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Alternative C

Management would strive to achieve the desired range of conditions as listed above with an emphasis on herbaceous species that would provide watershed protection and commodity values (e.g., forage for livestock within those areas remaining open to livestock grazing). Protection and treatment would be the same as Alternative B.

Alternative D

Mojave Desert communities would be allowed to function as naturally as possible. All livestock grazing and discretionary uses would be eliminated and all Mojave Desert vegetation (approximately 850,000 acres) would be protected from deterioration or conversion to annual invasive species by applying treatments where appropriate. Sulfonylurea herbicides, other acetolactate synthesis inhibiting herbicides, and herbicides with adverse effects on aquatic species would not be used.

Alternative E

Same as Alternative A.

2.5.5.8 Parameter – Riparian/Wetlands

Parameter Description

Approximately 3,100 acres of riparian/wetland vegetation exist on the Ely District. This acreage includes both lentic (springs and seeps) and lotic (flowing streams) systems. Lentic systems are further classified as saline and non-saline. These areas are important habitat for many wildlife species including many special status and threatened or endangered plants and animals. Lentic riparian areas in the Great Basin include small springs and seeps with very limited potential of producing woody riparian species (e.g., willows). Site potential is mostly herbaceous species (e.g., sedges, carices).

Desired Range of Conditions for Riparian/Wetland Areas

The BLM is directed to follow the appropriate rangeland health standards, which in the case of the Northeastern Great Basin Resource Advisory Council, states, "Riparian and wetland areas exhibit a properly functioning condition and achieve state water quality criteria." In addition to achieving riparian proper functioning condition, composition, structure, and cover of riparian vegetation would occur within potential of the site. Ground cover and species composition would be appropriate to the site. Riparian areas with free-flowing water (i.e., undeveloped springs) that are non-functional or functioning at risk would show improving trends toward proper functioning condition. Factors that prevent proper functioning condition have been addressed and mitigated, whenever possible. Restoration or maintenance of riparian areas would be a management priority applicable to all alternatives.

Vegetation would be protected and managed so that it provides for stable water flow and bank stability. Vegetation structure and diversity would be appropriate and effective in controlling erosion, stabilizing

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stream banks, healing channel incisions, shading water, filtering sediment, and dissipating energy. Riparian vegetation would include a canopy of uneven-aged key native woody plants with herbaceous composition commensurate with site potential and suitable as habitat for any resident special status species (see Section 2.5.7). Surface disturbances from roads, dispersed recreation, and inappropriate livestock use would heal as vegetation and soils recover. There would be no downward trend in riparian condition and function.

Alternative A

Resource uses (e.g., grazing) would be managed to achieve or make progress toward proper functioning condition. Treatment emphasis would be in riparian areas that are functioning at risk or are non-functional on a case-by-case basis. Approximately 713 acres (23 percent) are estimated to exist in this condition. The treatment would include the removal of exotic species such as noxious weeds and exotic woody species like tamarisk (salt cedar). This could involve the use of herbicides labeled for this use and in concert with current biological opinion.

Construction of new and maintenance or improvement of existing riparian/wetland livestock exclosures would continue. Areas not in proper functioning condition would be managed to attain an upward trend in the composition and structure of key riparian/wetland vegetation and desired physical characteristics of the stream channel and wetland soils. Uses and activities in riparian/wetland areas would be adjusted if current management does not allow for the maintenance or measurable progress toward achieving proper functioning condition.

Alternative B

Management would focus on maintaining or restoring plant community structure and composition of desired grasses, forbs, and shrubs where possible on riparian habitats and as appropriate to site potential. This management would require limitation of permitted uses to restore plant and animal communities reliant on these riparian areas. Vegetation structure and diversity would reflect site potential and vegetation would exhibit a canopy of uneven-aged key riparian woody plants. Management actions would focus on uses and activities that allow for the protection, maintenance, and restoration of riparian habitat. These activities and treatments could include the use of herbicides, especially to remove tamarisk or other noxious weeds or invasive species.

Alternative C

Management would focus on maintaining or restoring plant community structure and composition of desired species of grasses, forbs, and shrubs on all riparian habitats within site potential while providing for commodity production. This management would require vegetation structure and diversity commensurate with the site potential, thereby restoring plant and animal communities that are reliant on these riparian areas and providing for proper canopy and uneven-aged stands of key woody plants. Habitats would be maintained or improved and commodity production activities would be provided for in this context. The use of herbicides and changing the season of use could be among the tools used.

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Alternative D

Riparian conservation areas would be identified and managed to prohibit land-disturbing activities in those areas. Resource uses would be removed in all riparian areas, and natural processes would be allowed to occur as nearly as possible. Treatments of riparian areas would be prioritized toward those that have invasive or exotic species. In-stream channel manipulations would be avoided. Treatments would be the same as Alternative A, except that herbicide use would not include sulfonylurea herbicides, other acetolactate synthesis-inhibiting herbicides, and herbicides with adverse effects on aquatic species.

Alternative E

Same as Alternative B.

2.5.5.9 Parameter – Nonnative Seedings

Parameter Description

Nonnative seedings occur mostly within Wyoming big sagebrush and black sagebrush ecological sites, and are comprised of mostly crested wheatgrass.

Approximately 269,500 acres of nonnative seedings exist on the Ely District. Nonnative seedings comprise 0.5 percent of the planning area. This category is comprised primarily of seedings established several decades ago for increased forage production but also includes more recent fire rehabilitation seedings. This area includes the nonnative perennial seeded state shown in **Table 2.5-5** as well as smaller seeded areas within other vegetation parameters.

Desired Future Condition for Nonnative Seedings

Nonnative seedings are uncharacteristic to ecological sites. Ecological sites are comprised of correlations of existing soils and potential vegetation composition. The desired future condition for nonnative seedings would include a robust and releasable perennial herbaceous plant community that facilitates management for important multiple use resource values. Since most of the nonnative seedings occur within areas similar to low elevation sagebrush vegetation, most seedings would be managed for the cyclical return of sagebrush. Fire or fire surrogates would be used to retain the resilience of the perennial herbaceous species and to prevent a transition to an annual grass fire cycle state that would exclude sagebrush. When determining site-specific vegetation objectives, ecological site descriptions would be used as references for identifying appropriate management of non-seeded species on the site.

Most nonnative seedings, which were established in the 1950s to late 1960s, are now showing an increased sagebrush canopy and an increased density of native herbaceous species. While, nonnative herbaceous species are not likely to be totally eliminated from the altered state site, native species should still increase proportionally through time. After approximately 40 years, the shrub canopy is estimated to be in late phase (17 to 24 percent cover) on 215,600 acres. The desired range of conditions illustrated in **Figure 2.5-7** and

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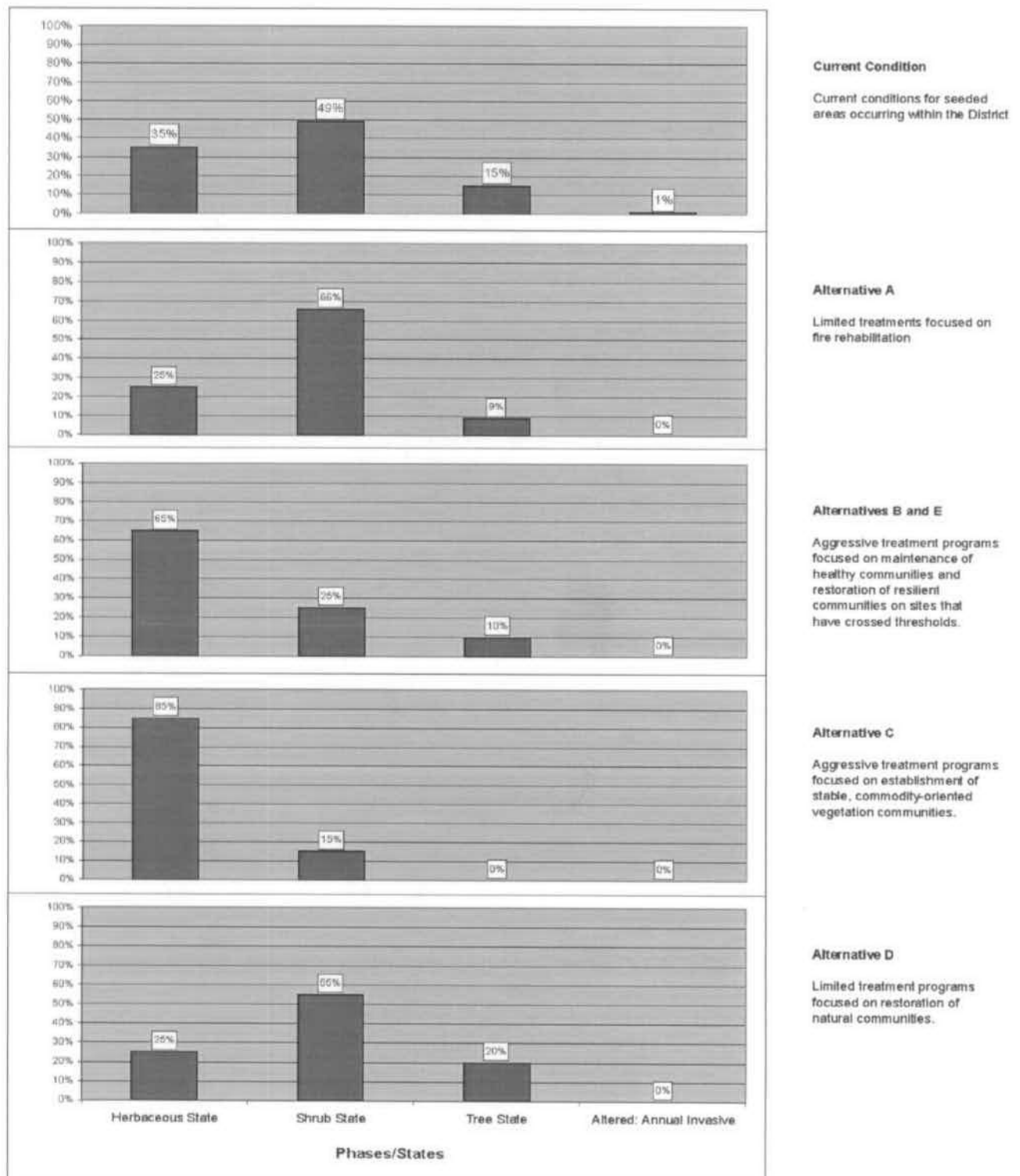


Figure 2.5-7. Desired Range of Conditions for Seeded Areas Under Various Alternatives

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listed in **Table 2.5-8** represent the desired percentages of each vegetation state and phase based on management goals of the alternative. A variation of 5 percent above or below these values would be allowed.

Alternative A

Management of nonnative seedings would focus on appropriate uses and treatments to maintain or improve understory species (i.e., grass and forbs) composition for multiple use objectives.

Comparison of data within the Current Conditions and Alternative A rows of **Table 2.5-8** indicates that approximately 45,800 acres (94,300 - 67,400) [40,400 - 24,200] [2,700 - 0] or 17 percent of the area occupied by this type would have to be treated and the remaining 83 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative A.

Table 2.5-8
Desired Range of Conditions of Seedings (Distribution of Phases and States)
for Various Alternatives

Habitat Type	Herbaceous state	Shrub state	Tree state	Annual Invasive State
Current Conditions	35% (94,300 acres)	49% (132,000 acres)	15% (40,400 acres)	1% (2,700 acres)
Alternative A	25% (67,400 acres)	66% (177,900 acres)	9% (24,200 acres)	0% (0 acres)
Alternative B	65% (175,200 acres)	25% (67,400 acres)	10% (26,900 acres)	0% (0 acres)
Alternative C	85% (229,000 acres)	15% (40,400 acres)	0% (0 acres)	0% (0 acres)
Alternative D	25% (67,400 acres)	55% (148,200 acres)	20% (53,900 acres)	0% (0 acres)
Alternative E	Same as Alternative B	Same as Alternative B	Same as Alternative B	Same as Alternative B

Treatments would be primarily in sites with increasing shrub composition and decreasing herbaceous composition. Areas would be seeded with vegetation species resistant to grazing. The preferred treatment method would be prescribed fire.

Alternative B

Nonnative seedings would be managed to achieve desired range of condition as shown in **Table 2.5-8** and described in the Altered Site Potential State Condition Class in Appendix D.

Comparison of data within the Current Conditions and Alternative B rows of **Table 2.5-8** indicates that approximately 80,800 acres ([132,000 - 67,400] [40,400 - 26,900] [2,700 - 0]) or 30 percent of the area occupied by this type would have to be treated and the remaining 70 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative B.

Alternative C

In this alternative, the majority of the area would be managed in the herbaceous state to provide high forage productivity. Canopy cover of sagebrush allowed for seedings would be 0 to 5 percent.

Comparison of data within the Current Conditions and Alternative C rows of **Table 2.5-8** indicates that approximately 134,700 acres ([32,000 – 40,400] + [0,400 – 0] + [2,700 – 0]) or 50 percent of the area occupied by this type would have to be treated and the remaining 50 percent of the acreage maintained to achieve the desired range of conditions identified for Alternative C.

Alternative D

Nonnative seedings would be restored to the original native plant community. The sagebrush canopy cover would not be changed.

Comparison of data within the Current Conditions and Alternative D rows of **Table 2.5-8** indicates that approximately 29,600 acres ([4,300 – 67,400] – [2,700 – 0]) or 11 percent of the area occupied by this type would have to be treated and assume no change in the remaining 89 percent of the acreage to achieve the desired range of conditions identified for Alternative D.

Treatment emphasis would be to restore native vegetation in all areas seeded with introduced species. Herbicide use would not include sulfonylurea herbicides, other acetolactate synthesis inhibiting herbicides, and herbicides with adverse effects on aquatic species.

Alternative E

Same as Alternative B.

2.5.5.10 Monitoring of Vegetation

Over the life of this plan, vegetation communities would be monitored to determine progress toward attaining desired range of conditions. Monitoring to determine success in meeting vegetation management objectives would shift to measuring cover, composition, and structure of the community (i.e., the parameters essential for identification of phases within the state and transition model concept). Periodic measurements of vigor, and productivity would continue.

Monitoring also would provide for a periodic evaluation of rangeland health within the District. Rangeland health is an indicator of the integrity of the soil and the ecological processes of the rangeland (National Research Council 1994). Loss of rangeland health causes a loss of capacity to produce resources and satisfy values. Three rangeland health attributes (i.e., soil and site stability, hydrologic function, and biotic integrity) and indicators related with these attributes may be used to qualitatively assess the current status of rangelands for a single point-in-time evaluation (Pyke et al. 2002). Although this qualitative approach is not recommended by the authors for monitoring rangeland trend, quantitative measurements of various

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parameters related to these same attributes would be included in the monitoring program. Long-term monitoring would include not only plant composition and biomass production, but also soil surface condition, erosion rates, distribution of nutrients and energy, and presence of functioning recovery mechanisms as a means of identifying rangelands at greater risk of loss of health (National Research Council 1994).

2.5.6 Fish and Wildlife

Introduction

Section 102.8 of Federal Land Policy and Management Act states it is policy to manage public lands in a manner that will protect the quality of multiple resources and will provide food and habitat for fish, wildlife, and domestic animals. Resource Advisory Council Standard and Guidelines directs BLM to foster productive and diverse populations and communities of plants and animals. It also is BLM policy to cooperate with state agencies to accommodate species management population goals to the extent that they are consistent with the principles of multiple use management. The Nevada Department of Wildlife manages fish and wildlife species through management objectives set up in their respective management plans. The BLM manages habitat in a manner that protects the quality of multiple resources and provides food and habitat for fish, wildlife, and domestic animals.

Due to reintroduction, augmentation, and immigration of elk in Nevada, populations have greatly expanded their range on the Ely District as well as other portions of the state. Mule deer and pronghorn populations have fluctuated due to a variety of factors including habitat loss, fragmentation, and habitat quality. Rocky Mountain bighorn sheep have been reintroduced into the planning area. Nevada Department of Wildlife has been pursuing a statewide effort to restore bighorn sheep into suitable unoccupied habitat and enhance populations in currently occupied areas.

The composition of upland vegetation types (arrangements, densities, age classes, etc.) greatly influences wildlife habitat quality and productivity. Because the character of upland vegetation can vary in response to federal land use authorizations, BLM needs to consider the consequences of various land uses (such as grazing, mining, and oil and gas development) and vegetation treatments to the health of fish and wildlife habitat. BLM management goals, as presented in this Resource Management Plan, would emphasize active and passive restoration to achieve ranges of healthy vegetation conditions through the watershed restoration process.

Aquatic Habitat and Fisheries

Desired Range of Conditions

Aquatic habitat would support nonnative and/or native fish species as appropriate for the selected alternative.

Goal

In cooperation with the Nevada Department of Wildlife, manage suitable aquatic habitats to sustain nonnative fisheries and minimize conflicts between nonnative and native fish species. (Bonneville cutthroat trout are discussed under Special Status Species.) Native nongame fisheries are discussed in the Special Status Species section.

Management Common to All Alternatives

None.

2.5.6.1 Parameter – Aquatic Habitat and Fisheries

Alternative A

Fishery habitat would be managed for the maintenance of nonnative fisheries in cooperation with Nevada Department of Wildlife. Nonnative and native fisheries conflicts would be addressed on a case-by-case basis.

Special riparian use restrictions or limitations would be implemented on a case-by-case basis to protect nonnative fisheries. Examples of restrictions could include fencing, grazing exclusions, and no fire retardant allowed within 100 yards of riparian areas.

Alternative B

The BLM would work with the Nevada Department of Wildlife and the U.S. Fish and Wildlife Service to enhance native fisheries wherever possible and balance native and nonnative fishery management strategies to identify, minimize, or eliminate conflicts between nonnative species and native nongame fisheries.

Riparian habitat would be actively managed for proper functioning conditions.

Alternative C

Fishery habitat would be managed to enhance nonnative fisheries in cooperation with Nevada Department of Wildlife. Nonnative and native fisheries conflicts would be mitigated and special riparian use restrictions or limitations would be implemented on a case-by-case basis to protect nonnative fisheries.

Riparian habitat would be actively managed the same as Alternative A.

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Alternative D

Native fisheries would be maintained, protected, and restored. Nonnative fishery habitat would not be actively managed and the BLM would encourage the Nevada Department of Wildlife to eliminate established nonnative fisheries and not establish any new nonnative fisheries.

Aquatic and terrestrial riparian habitat would primarily be managed passively from the exclusion of discretionary commodity uses of public lands. Active management would occur where state water quality criteria apply or non-functioning conditions persist.

Alternative E

Management focus and cooperation with Nevada Department of Wildlife and U.S. Fish and Wildlife Service would be the same as Alternative B.

Watershed analyses would further identify that standards for rangeland health are being achieved for all components of the watershed. Rangeland Health Standards Assessments would determine if livestock grazing is a causal factor for nonattainment of objectives. Corrective actions to livestock management would be taken or exclusion of livestock would occur until management objectives were met.

Terrestrial Wildlife

Desired Range of Conditions

Habitat diversity and productivity would support the diverse array of wildlife species present within the District. The desired range of habitat conditions varies among individual wildlife species based on their specific habitat requirements.

In cooperation with the Nevada Department of Wildlife, provide habitat for wildlife (i.e., forage, water, cover, and space) that is of sufficient quality and quantity to support productive and diverse wildlife populations, in a manner consistent with the principles of multiple-use management, to enhance biological diversity, and to sustain the ecological, economic, and social values necessary for all species.

Goal

In cooperation with Nevada Department of Wildlife, provide habitat for wildlife (i.e., forage, water, cover, and space) that is of sufficient quality and quantity to support productive and diverse wildlife populations, in a manner consistent with the principles of multiple-use management, to enhance biological diversity, and to sustain the ecological, economic, and social values necessary for all species.

Management Common to All Alternatives

Wildlife habitat would be managed through both proactive multiple-use management actions in the short term and a long-term restoration approach. This approach would be based on managing for various states and phases of vegetation (based on site potential per ecological site descriptions) as outlined in the state-and-transition models for the major vegetation types.

2.5.6.2 Parameter – General Wildlife Habitat Management

Alternative A

Wildlife habitat projects would be primarily performed for big game species and would be actively guided by cooperatively developed state, local, and BLM habitat management plans. Wildlife habitat management would be primarily species- and site-specific, would be reactive to degraded and fragmented habitats, and would address an immediate need or habitat niche on a case-by-case basis.

Restoration and management of habitats would not occur on a landscape scale.

Alternative B

Wildlife habitat management would emphasize active and passive vegetation restoration for both game and nongame species where no known conflicts with native species exist. See the vegetation section for the desired range of conditions.

The predominant emphasis would entail restoring degraded and fragmented habitats (both natural and human-induced), which have not crossed vegetation transitional thresholds, to a range of more resilient natural ecological conditions with appropriate native grass and forb understories. This alternative also would emphasize the maintenance and conservation of healthy, resilient, and functional vegetation communities.

Alternative C

Wildlife habitat management would be performed for game species that offer the greatest recreational opportunities and economic stimulus to local economies.

Habitat management would focus on converting healthy shrub and woodland communities with intact understories, which have not crossed vegetation transitional thresholds, to an uneven mosaic of predominantly herbaceous habitats.

Alternative D

Wildlife habitat management would emphasize a passive and indirect management approach to restoration for both game and nongame species through the exclusion of discretionary uses of public lands.

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Natural process would restore degraded habitats. Any active habitat management would emphasize restoration of direct, human-induced alterations to the natural environment and protection of large, core areas of existing intact habitats.

Alternative E

Same as Alternative B.

2.5.6.3 Parameter – Wildlife Water Developments

Alternative A

Wildlife water developments would continue to be used to increase game species distribution and density, and provide increased recreational opportunities on a case-by-case basis. Water developments would be evaluated based on Nevada Department of Wildlife water development criteria presented below.

Nevada Department of Wildlife Water Management and Development Criteria:

Goals:

- Promote sound scientific wildlife management
- Ensure projects incorporate all reasonable and practical ecological and wildlife diversity considerations
- Construct functional, durable projects using up-to-date designs, materials, and techniques
- Maximize federal aid revenues
- Ensure maintenance and upgrade work are programmed to be completed in a timely and efficient manner
- Protect natural waters (springs/seeps) and habitats
- Increase opportunity for consumptive and non-consumptive recreation

Justification:

- Increase wildlife species distribution and diversity
- Avoid disease issues and maintain herd/population health and reduce inter/intra specific competition between all wildlife species
- Mitigate for loss, degradation, or fragmentation of habitat
- Meet various wildlife species plan objectives
- Retain the effectiveness of identified wildlife movement corridors

Alternative B

Water management and riparian restoration would be the primary emphasis to provide reliable sources of water to wildlife. No emphasis to water developments would occur to increase game species distribution or density beyond what natural water source availability and location could support. Water developments would be used primarily to mitigate multiple-use impacts to game and non-game wildlife species from loss of

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habitat or continued reduced natural waters source availability. Water developments would be evaluated based on BLM water development criteria (see below).

Initial assessment of potential water development mitigation areas would be provided to Nevada Department of Wildlife and the public within two years from the signing of the RMP Record of Decision. Installation of water developments within these areas would occur based on Nevada Department of Wildlife population goals and BLM multiple-use objectives.

Water mitigation would only be performed in areas where natural water reductions (length of lotic) have occurred from diversion or losses of past and future habitat (mines, disposal, inter-specific competition or habitat quality lessened by presence/utilization of livestock, etc.) that was not naturally and originally water limited.

During the watershed analysis process, initial water mitigation areas would be refined through delineations and watershed restoration plans, which would encompass restoration of riparian systems.

As watershed restoration plans are prepared, identify and remove existing water developments that cannot mitigate for losses of natural waters or losses of non-water limited wildlife habitats from multiple-use management actions.

BLM Water Management and Development Criteria:

Goals:

- Increase natural water availability through restoration of natural riparian habitats and proper livestock management
- Mitigate for losses of natural waters or losses of non-water limited wildlife habitats from multiple-use management actions
- Remove existing water developments, unsuitable for mitigation purposes
- Construct functional, durable projects using up-to-date designs, materials and techniques

Justification:

- Ensures wildlife is managed in consideration of habitat ecology and native biodiversity, as dictated by the given carrying capacity of the land under a multiple-use management mandate

Alternative C

Same as Alternative A, except water developments would be maximized to expand suitable habitats and increase the distribution and density of economically significant wildlife populations, and to provide increased recreational opportunities.

Water developments would be secondarily used to mitigate for impacts to game species from loss of habitat or natural water sources.

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Any wildlife conflicts with livestock forage bases would be mitigated. Where commodity oriented objectives have fragmented shrubland habitats, water developments also would be used to mitigate the impacts to shrubland-dependant wildlife.

Alternative D

Removal of permitted uses from public lands would be the primary emphasis to provide reliable sources of water to wildlife. No emphasis to water developments would occur to increase game species distribution or density beyond what natural water source availability and location could support. Water developments would be used primarily to mitigate multiple-use impacts to game and non-game wildlife species from loss of habitat or continued reduced natural waters source availability. Water developments would be evaluated based on BLM water development criteria (see below).

Water development criteria would be used to assess where mitigating water developments are warranted. The watershed analysis process would be used to mitigate for past multiple-use losses in habitat or reductions in habitat quality.

The BLM would mitigate for continued losses of water source locations and water availability if new applications to change beneficial uses from livestock to other applied uses occur.

Existing water developments that are not mitigating multiple-use impacts to wildlife from loss of habitat or natural waters sources would be removed.

BLM Water Management and Development Criteria:

Goals:

- Increase natural water availability through exclusion of permitted uses of public lands
- Mitigate for past losses of non-water limited wildlife habitats and possible continued losses of natural waters after the exclusion of permitted uses of public lands
- Construct functional, durable projects using up-to-date designs, materials, and techniques

Justification:

- Ensures wildlife is managed in consideration of habitat ecology and native biodiversity, as dictated by the carrying capacity of the land.

Alternative E

Water developments would primarily be used to increase game species distribution and density and provide increase recreational opportunities. Water developments would be secondarily used to mitigate for impacts to game species from loss of habitat or natural water sources. The BLM, in cooperation with the Nevada Department of Wildlife and the public coordinated resource management process (mostly elk management), would use criteria developed by the BLM to assess the need and locations for water developments (see below).

2.5 Management Direction for Resource Programs

The BLM would work with the Nevada Department of Wildlife and use BLM criteria (see below) to increase game species distributions and density by installing water developments in water-limited, but otherwise suitable habitats. Water developments would be based on multiple-use decisions and habitat conditions to support the expected increase in species in an area from water development projects.

Potential inter- and intra-specific conflict areas would be identified and mapped for all proposed water developments. This would be evaluated through the watershed analysis process for all existing water developments.

Areas with suitable habitats that are water limited and have minimal inter/intra-specific conflicts would be identified and water development locations would be prioritized by species, in coordination with the Nevada Department of Wildlife and through the Lincoln and White Pine Elk Technical Review Teams.

During the watershed analysis process, water development locations would be refined through delineations and watershed restoration plans, which would encompass restoration of riparian systems.

BLM Water Management and Development Criteria:

Goals:

Use water developments to:

- Increase wildlife distribution and density:
 1. To meet the demands of the public for increases in game species and provide increased recreational opportunities.
 2. Balance wildlife objectives with permitted uses and habitat condition/carrying capacity under a multiple-use management mandate.
- Reduce inter- and intra-specific competition by prioritizing to:
 1. Reduce intra-specific competition between wildlife species.
 2. Reduce intra-specific competition between elk and livestock
 3. Reduce inter-specific competition between wildlife.
 4. Reduce inter-specific competition between wildlife and special status plant and animal species by placing water developments only where the installation would be compatible with the special status species' conservation.
- Mitigate for losses of natural waters or losses of wildlife habitats from multiple-use management actions.
- Construct functional, durable projects using up-to-date designs, materials, and techniques

Restore resilient habitats to:

- Increase natural water availability through restoration of natural riparian habitats and proper livestock management.

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Justification:

- Ensures wildlife is managed in consideration of 1) public desire for increased game animals; and 2) in relation to the carrying capacity of the land under multiple-use management.

2.5.6.4 Parameter – Migratory Bird Habitat (including sagebrush-obligate species)

Alternative A

Migratory birds would be managed in consideration of the best management practices developed in response to Executive Order 13186 to evaluate the effects of federal actions on migratory birds. Consideration of the proper vegetation mosaics and avian life history needs for conserving, restoring, and managing habitats for migratory birds, would be applied on a case-by-case basis.

Migratory birds would be managed in consideration of best management practices, with blanket restrictions on surface disturbing activities and survey requirements as outlined in Ely District Policy.

Alternative B

Avian life history and habitat needs for migratory bird species (as identified in BLM best management practices, Nevada Partners in Flight) would be factored into maintenance, conservation, and restoration actions District-wide, through watershed analysis and on a case-by-case basis. Migratory bird spatial and temporal habitat needs would be factored into a landscape approach to achieve proper mosaics of vegetation, as quantified in the vegetation section. See Appendix J for BLM Nevada Migratory Bird Best Management Practices for the Sagebrush Biome.

An initial and proactive approach to migratory bird conservation would be undertaken for a suite of Ely BLM special status migratory bird species identified in Appendix F, Special Status Species. Within 5 years from the signing of the Record of Decision, the seasonal migratory bird habitats of these species would be quantified and delineated (for current and potential habitats). Breeding bird and winter surveys would be initiated in cooperation with Nevada Department of Wildlife, the Great Basin Bird Observatory, volunteers, and partners, to document population status and trends, and specific habitat maintenance, enhancement, and restoration actions for the species identified. Important bird areas and migration corridors would be identified and managed to maintain and conserve their value for migratory birds.

Through watershed analysis, migratory bird species habitat needs would be assessed to identify if livestock grazing is a causal factor for nonattainment of standards. Where livestock is the cause of nonattainment of standards, corrective actions to livestock management or exclusion of livestock would occur until management objectives were met.

Alternative C

Same as Alternative A.

Alternative D

Conservation actions for migratory bird habitat would emphasize the exclusion of discretionary uses of public lands. Thus, management of migratory birds and their habitats would be primarily passive.

Natural processes would be allowed to function and dictate the mosaics of wildlife habitats on a landscape scale. Restoration would occur only where human-induced alterations have modified the natural environment.

Alternative E

Same as Alternative B.

2.5.6.5 Parameter – Nonnative Upland Game Bird Habitat

Alternative A

Vegetation communities would not be actively managed for the habitat needs of nonnative upland game.

Alternative B

Same as Alternative A.

Alternative C

Habitat would be managed to maximize existing nonnative game bird populations, and the BLM would work with the Nevada Department of Wildlife to explore other nonnative game bird management opportunities (see Section 2.5.5.5).

Alternative D

Same as Alternative A, except the Nevada Department of Wildlife would be encouraged to eliminate established nonnative game bird populations and to not establish any new nonnative game birds.

Alternative E

Where no known conflicts with native species exist, nonnative game birds (i.e., chukar, Hungarian partridge) would be managed indirectly through restoration of natural systems that have been affected by various disturbance factors (e.g., poor grazing management, fires, and weed invasions). See the vegetation section for the desired range of conditions.

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2.5.6.6 Parameter – Great Basin Big Game Habitat (Mule Deer, Pronghorn, and Elk)

Alternative A

Big game species habitats would be managed to support increased game species numbers, distributions, and densities, and provide increased recreational opportunities beyond what natural habitats and water sources would support.

The needs of non-game species would not be factored heavily into habitat management actions. Wildlife projects would be performed to address an immediate need or habitat niche for an individual big game species on a case-by-case basis.

No management emphasis would be developed or implemented to prioritize efforts toward conservation, maintenance, enhancement, and restoration of any seasonal big game habitats.

Present and future forage allocations, livestock restrictions, and additional forage bases are created or proposed for livestock and wild horses through existing land use plans, activity plans (including the local elk plans), allotment evaluations, and watershed restoration plans. Forage would not be reserved for wildlife, but additional forage bases would be created to benefit wildlife after allocation to livestock and wild horses. Elk would not be granted status as indigenous (native) wildlife and would be managed through procedures and actions identified in the Lincoln and White Pine County Elk Plans. The Lincoln County Elk Plan would monitor and manage for elk in relation to proper rangeland condition and monitor forage utilization, adverse affects upon livestock, indigenous wildlife (i.e., mule deer, antelope, bighorn sheep, sage grouse, other mammals and birds, etc.) and wild horses, and establish allowable use levels for elk, livestock, and wild horses. The White Pine Elk Plan would monitor and manage for proper rangeland condition and to minimize adverse affects upon indigenous wildlife (i.e., deer, other mammals, game birds, etc.) and wild horses.

Alternative B

Big game species habitats would be managed in consideration of the seasonal and temporal habitats that are appropriate (ecologically and historically) to the landscape and in balance with the natural carrying capacity of the land and water sources.

The needs of all wildlife (non-game and game) would be factored into habitat management actions at a landscape scale. No projects would be implemented for individual big game species. A maintenance and restoration approach would be emphasized to manage shrubland habitats for the early-mid phase of the herbaceous state.

The management emphasis in watershed restoration plans would prioritize efforts toward conservation, maintenance, enhancement, and restoration of: 1) designated crucial habitats; 2) migratory corridors; and 3) other seasonal habitats across the landscape.

2.5 Management Direction for Resource Programs

Big game habitat assessments would be performed in crucial mule deer, pronghorn, and bighorn sheep habitats as part of the watersheds analyses, first in the high priority watersheds (completed by 2011) followed by the lower priority watersheds, with the objective of identifying if livestock are a causal factor for nonattainment of standards.

Forage and additional forage bases created through maintenance and restoration of habitats would be allocated to watershed maintenance and indigenous wildlife, including elk. Elk would be granted the same status as other indigenous wildlife. Elk habitat management objectives would be developed to support elk, but only at the level where they naturally and historically occurred.

Alternative C

Big game species habitats would be managed collectively with livestock objectives to support increased game species numbers, distributions, and densities and provide increased recreational opportunities beyond what natural habitats and water sources would support.

The needs of non-game species would minimally be factored into habitat management actions. Elk habitats would be managed in concert with livestock objectives, and would be designed to create a predominantly early phase of the herbaceous state across the landscape. Mule deer and antelope habitats would be actively managed where no direct conflicts with livestock or commodity oriented objectives occur.

No management emphasis would be developed or implemented to prioritize efforts toward conservation, maintenance, enhancement, and restoration of any seasonal big game habitats.

Individual big game habitat assessments would not be performed in crucial mule deer, pronghorn, and bighorn sheep habitats. Through the watershed analysis process, the BLM would determine if livestock are a causal factor for nonattainment of standards.

Forage and additional forage bases created through maintenance and restoration of habitats would be allocated to livestock.

Alternative D

Big game species habitats would not be actively managed to increase distribution or density, beyond what natural habitats and water sources would support.

Conservation actions for all wildlife habitats would be emphasized primarily through the exclusion of permitted uses of public lands. Habitat restoration would be emphasized secondarily where human-induced alterations have modified the natural environment.

Forage bases from the exclusion of permitted uses of public lands and restoration of human-induced alterations, would be allocated to watershed maintenance, wildlife, and wild horses.

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Alternative E

Big game species habitats would be managed to meet the public demand for increased game species distribution, density, and increased recreational opportunity, beyond what natural habitats and water sources would support, but in balance with other wildlife habitat objectives.

The needs of game and non-game wildlife would be factored into habitat management actions at a landscape scale and designed to minimize or eliminate conflicts identified with special status, game, and non-game species habitats. A maintenance and restoration approach would be emphasized to manage shrubland habitats for the early-mid phase of the herbaceous state.

The management emphasis in watershed restoration plans would prioritize efforts toward conservation, maintenance, enhancement, and restoration of a range of conditions providing: 1) designated crucial habitats; 2) migratory corridors; and 3) other seasonal habitats across the landscape.

Big game habitat assessments would be performed in crucial mule deer, pronghorn, and bighorn sheep habitats as part of the watersheds analyses, first in the high priority watersheds (completed by 2011) followed by the lower priority watersheds, with the objective of identifying if livestock are a causal factor for nonattainment of standards.

Forage and additional forage bases created through maintenance and restoration of habitats would be allocated to watershed maintenance, indigenous wildlife, livestock, and wild horses. Elk would not be granted the status of indigenous wildlife and would be managed through procedures and actions identified in the Lincoln and White Pine County Elk Plans. In concert with BLM developed water development criteria and reviews, the BLM would initiate a study and in 2 years identify and delineate potential areas where competition between the same wildlife species (intra-specific) or potential niche overlap or competition between different species (inter-specific) occur. Working cooperatively and in conjunction with the Nevada Department of Wildlife and the local Elk Technical Review Teams for Lincoln and White Pine counties, the BLM would manage big game habitats in consideration of inter- and intra-specific competition through habitat maintenance and restoration actions identified in a watershed restoration plan.

2.5.6.7 Parameter – Great Basin Big Game Habitat (Rocky Mountain Bighorn Sheep)

Alternative A

Rocky Mountain bighorn sheep populations would be maintained only on Mount Grafton and Mount Moriah. When changes to BLM grazing permits are being considered, domestic sheep would be managed in consideration of the Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats (Instruction Memorandum No-98-140).

Management of high and low elevation habitats would occur on a fine scale and indirectly through wildfire emergency stabilization projects.

Alternative B

Rocky Mountain bighorn sheep would be managed in all historic ranges and all historic seasonal habitats. Domestic livestock (sheep and cattle) grazing would be eliminated in all Rocky Mountain bighorn sheep ranges and migration routes.

High and low elevation habitat management would occur directly from active large-scale restoration and indirectly through wildfire emergency stabilization projects.

Alternative C

Rocky Mountain bighorn sheep populations would be maintained only on Mount Grafton and Mount Moriah. When changes to BLM grazing permits are being considered, domestic sheep would be managed in consideration of the Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats (Instruction Memorandum No-98-140).

Low elevation habitat management would occur directly from active large-scale restoration. High elevation habitats would not be managed for active restoration. Both high and low elevation habitats would be managed indirectly through wildfire emergency stabilization projects.

Alternative D

A passive and indirect management emphasis would exclude all commodity uses of public lands.

Passive management would be emphasized over active management. Active habitat restoration for Rocky Mountain bighorn sheep would be emphasized only in areas affected by wildfires or where invasive species dominate.

Alternative E

Rocky Mountain bighorn sheep populations would be maintained only on Mount Grafton and Mount Moriah. When changes to BLM grazing permits are being considered, domestic sheep would be managed in consideration of the Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats (Instruction Memorandum No-98-140).

High and low elevation habitat management would occur directly from active large-scale restoration and indirectly through wildfire emergency stabilization projects as described for Alternative B.

2.5.6.8 Monitoring of Fish and Wildlife

Baseline wildlife use patterns and estimated population levels would be calculated using information collected annually by the Nevada Department of Wildlife. These would be compared with post-treatment use patterns and population numbers to determine relative effectiveness of watershed restoration. Forage

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production would be monitored on an allotment basis during watershed health assessments. Annual livestock and wild horse utilization records gathered by BLM staff, wildlife use records reported by Nevada Department of Wildlife, and BLM observations would be used to determine possible conflicts. Conflicts between livestock, wild horses, and wildlife would be resolved during the assessments and subsequent grazing permit renewals. Impacts to wildlife populations would take into account changes in herd management objectives as set by the Nevada Department of Wildlife.

Periodic inventories of fisheries are conducted by the Nevada Department of Wildlife on perennial streams and reservoirs that contain recreational fish species. The BLM would coordinate with the Nevada Department of Wildlife in review of information relating to management of fisheries habitat on public lands.

The BLM would periodically assess watershed-level changes in vegetation communities (e.g., sagebrush, pinyon-juniper) from wildfire, prescribed fire, vegetation treatments, insect infestations, or other major influences. Where vegetation treatments are applied, the BLM would monitor results with photo and vegetation sampling including species and structural composition both before and after treatment, if possible. These changes would be mapped using appropriate technologies (e.g., global positioning system, geographic information system, and remote sensing technologies). Habitat Assessments would be based on state and transition models. Fish and wildlife habitats would be evaluated periodically during Rangeland Health Assessments and after major catastrophic events such as large-scale wildfires. Where necessary, recommendations would be made for protection or restoration of fragmented, damaged, or degraded habitats.

2.5.7 Special Status Species

Introduction

Section 102.8 of Federal Land Policy and Management Act requires that public land be managed to protect the quality of multiple resources and to provide food and habitat for fish, wildlife, and domestic animals. The BLM must follow the requirements of the "Endangered Species Act" to protect federally listed species and their habitats. The Endangered Species Act also mandates management that leads to the conservation or recovery of federally listed threatened or endangered species. This Act, as well as BLM policy, encourages management to protect special status species not currently listed as threatened or endangered, to prevent federal listing. Most fish and wildlife assigned to a special status category are limited in their distributions, populations, or habitats and may be at risk over various geographic areas. The BLM would consider the consequences and relationships of management to the habitat and life history needs of special status species, consistent with guidelines identified in BLM Manual 6840, recovery plans, biological opinions, plan amendments, and interagency recovery implementation teams.

Desired Range of Conditions

The specific habitats on which federally listed species or sensitive status species are dependent would support the recovery of listed species and prevent the listing of additional species.

Goal

Manage public land to maintain, restore, improve, or enhance populations and habitats which lead to the recovery of federally listed species and preclude the need for listings of proposed, candidate, state-protected, or BLM sensitive species.

Management Common to All Alternatives

1. Management direction for federally listed species would follow U.S. Fish and Wildlife Service Recovery Plans.
2. Priority for the application of management actions would be: 1) federal endangered species, 2) federal threatened species, 3) federal proposed species, 4) federal candidate species, and 5) BLM sensitive species.
3. All management actions and direction identified in the Caliente MFP Amendment for the Management of Desert Tortoise Habitat (BLM 2000) are valid and would be carried forward within this RMP (Appendix I).
4. The Conservation Agreement and Conservation Strategy for Bonneville Cutthroat Trout in the State of Nevada would be implemented.
5. The Statewide Conservation Plan for Sage Grouse, which includes local or county sage grouse conservation plans, would be implemented.
6. The BLM would participate in the Nevada Department of Wildlife Interagency Restoration Implementation Teams to identify and address implementation of management actions for the recovery of listed species in the Ely District.
7. Actions identified to mitigate take of listed species on private lands under Section 10 of the Endangered Species Act would occur on public lands within the Ely District. BLM mitigation actions would be developed through the U.S. Fish and Wildlife Service Multiple Species Habitat Conservation Plans.
8. A District-wide procedure for documenting and reporting bald eagle sightings would be initiated. All sightings would be reported yearly to the U.S. Fish and Wildlife Service, Nevada Department of Wildlife, and Nevada Natural Heritage Program. If occupied nesting (unlikely) or wintering (possible) sites are documented on BLM-managed lands, an assessment of the area would be initiated and management options or conservation measures would be assessed and implemented if needed.
9. Indirect effects from BLM management actions in the White River Valley to the White River spinedace (species occurs on private and state lands) and Railroad Valley springfish (species occurs on Bureau of Indian Affairs lands) would be evaluated on a case-by-case basis through the NEPA and Endangered Species Act Section 7 consultation processes. The BLM also would implement any additional

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management or actions for these species, as directed through the Nevada Department of Wildlife White River Valley Interagency Restoration Implementation Team (see § above).

10. Indirect effects from BLM management actions in the Pahrnagat Valley to Hiko White River springfish (species occurs in Hiko and Crystal springs on private property) and Pahrnagat roundtail chub (species occurs on private property) would be evaluated on a case-by-case basis through the NEPA and Endangered Species Act Section 7 consultation processes. The BLM also would implement any additional management or actions for these species, as directed through the Nevada Department of Wildlife Pahrnagat Valley Interagency Restoration Implementation Team (see § above).
11. The BLM would manage the White River springfish habitats of Ash Springs, in a multiple-use wildlife-recreation emphasis, through the actions identified in the Ash Springs Coordinated Management Plan, the 72-acre administrative withdrawal of Ash Springs from settlement, sale, location, or entry (except there would be a no-surface occupancy for fluid mineral leasing), and the mitigation and monitoring contained within existing U.S. Fish and Wildlife Service Section 7 consultations (1-5-99-I-239). Mineral leasing in this area would be subject to the no-surface occupancy stipulation proposed for the cultural resources site encompassing the area. The BLM also would implement any additional management or actions for these species, as directed through the Nevada Department of Wildlife Pahrnagat Valley Interagency Restoration Implementation Team (see § above).
12. Sagebrush management actions would be implemented in consideration of the sage grouse guidelines (Connelly et al. 2000) and sage grouse best management practices (Appendix K) on a case-by-case basis (see Appendix M, Wildlife Desired Future Conditions).
13. BLM sensitive species (pygmy rabbit, springsnails, etc.) would be managed in accordance with BLM policy 6840 (Special Status Species Management).

2.5.7.1 Parameter – General Special Status Species

Alternative A

Special status species management would address an immediate need or habitat niche for the maintenance, mitigation, and restoration of a single special status species. Special status species management would be implemented on a case-by-case basis predominately at the fine scale (i.e., allotment project, portion of a watershed), and occasionally at the District level.

Alternative B

Special status species management would be specifically assessed in relation to overall habitat conditions and identification of causal factors for declines within the District. Proactive measures would include habitat restoration and multiple use restrictions or modifications. The habitat requirements, trends, threats, and management objectives for special status species would be reviewed at the broad national and regional scales, at the large scale, and at the mid scale (i.e., watershed). Maintenance and mitigation measures

2.5 Management Direction for Resource Programs

would still be implemented where multiple-use impacts occur or where habitat or populations are at or near their natural potential.

Alternative C

Same as Alternative A.

Alternative D

Special status species management would emphasize a passive and indirect management approach through the exclusion of discretionary uses of public lands. Natural process would be allowed to restore degraded habitats and determine future habitat conditions. Any active habitat management would emphasize restoration of direct human-induced alterations to the natural environment and protection of large, core areas of existing intact habitats.

Alternative E

Same as Alternative B.

2.5.7.2 Parameter – Bats

Alternative A

Bats would be managed by actions identified in the Ely District Cave Management Plan and by restricting recreation actions and activities.

Alternative B

Important roosting and foraging habitats for bats would be identified independently of watershed analysis and proactive measures would be implemented to conserve, protect, and restore these habitats. Recreational caving would be reassessed for impacts.

The Ely District Cave Management Plan would be updated, as needed, to account for known bat roost sites.

Alternative C

Same as Alternative B, except restoration actions for bats would be emphasized only in areas where no conflicts with commodity objectives occur.

The Ely District Cave Management Plan would be updated to minimize and mitigate impacts to bat roosts from caving, as needed.

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Alternative D

Same as Alternative A.

Alternative E

The final Nevada Bat Conservation Plan would be utilized for guidance on implementation of proactive bat management actions.

Recreational caving would be reassessed for impacts and the Ely District Cave Management Plan would be updated.

In vegetation communities, especially riparian areas and pinyon-juniper woodlands, the habitat needs of obligate bat species would be considered in management actions.

2.5.7.3 Parameter – Great Basin Riparian Habitats

Special Status Species

Section 7

Pahrump poolfish-(see Management Common to All Alternatives)

White River spinedace-(see Management Common to All Alternatives)

Railroad Valley springfish-(see Management Common to All Alternatives)

Big Spring spinedace

Selected BLM Sensitive Species

Meadow Valley Wash desert sucker

Meadow Valley Wash speckled dace

Ute ladies'-tresses

Alternative A

Shoshone Pond has been fenced by BLM to provide a U.S. Fish and Wildlife Service refugium for the endangered Pahrump poolfish. The fence would continue to be maintained as needed. No further action would be implemented.

Big Spring spinedace recovery and management actions would continue to be implemented as per the Big Spring spinedace Recovery Plan and Condor Canyon Habitat Management Plan.

Restoration/recovery efforts would be focused on mitigating the direct and indirect post-wildfire effects to Condor Canyon and aquatic habitats.

No known locations of Ute ladies'-tresses exist in the Ely District and no active BLM management for the species would occur unless the species is documented through other activities.

Alternative B

A new fence would be built around Shoshone Pond to exclude both human and livestock access into the area and expanded in size to protect the aquatic environments from excessive upland siltation and run-off.

Shoshone Pond would be managed to provide optimum habitat conditions for the fishery refugium and the larger protected area would be seeded with appropriate species.

The Panaca Valley watershed would be made a high priority for watershed analysis. A habitat inventory would be completed for the Condor Canyon portion of the Panaca Valley Watershed as part of the watershed analysis process.

The watershed analysis process would determine the causal factors leading to aquatic and terrestrial habitat degradation and identify a restoration strategy. Specific actions to protect and restore Condor Canyon and the habitats of federally threatened Big Spring spinedace and BLM and Nevada Species of Concern, the Meadow Valley Desert sucker and speckled dace, would be formulated.

The BLM would initiate a systematic survey of potential habitats for Ute ladies'-tresses and initiate recovery actions for any discovered occurrences of the species or areas with habitat potential in accordance with the Ute ladies'-tresses recovery plan, as it is developed.

Alternative C

The Shoshone Pond fence would be repaired to the original size and specifications.

Management of the Condor Canyon area would be the same as Alternative B, except Condor Canyon would additionally be managed as a multiple-use area, with managed recreational development.

No active BLM management for Ute ladies'-tresses would occur unless the species is documented through other activities.

Alternative D

The Shoshone Pond fence would be re-built to the original footprint and designed solely to restrict human access into the area.

Management of Condor Canyon would emphasize the exclusion of discretionary uses of public lands and restoration of natural hydrology.

Management for Ute ladies'-tresses would be the same as Alternative B, except that habitat vegetation would focus on the control of noxious and invasive species and the conflicting uses would be minimized or eliminated.

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Natural processes would be allowed to function and dictate the mosaics of wildlife habitats within Condor Canyon.

Alternative E

Same as Alternative B, except that the BLM would survey and monitor federal lands for Ute ladies'-tresses, based on the availability and assistance of the U.S. Fish and Wildlife Service personnel and their identification of potential areas and habitats for the species. Conservation and recovery actions would be implemented on any discovered occurrences.

2.5.7.4 Parameter – Mojave and Great Basin Riparian Habitats

Special Status Species Included in RMP U.S. Fish and Wildlife Service Section 7 Consultation

- Southwestern willow flycatcher
- Western yellow-billed cuckoo
- Meadow Valley Wash desert sucker
- Meadow Valley Wash speckled dace
- Arizona southwestern toad

Alternative A

Southwestern willow flycatcher recovery actions and management of riparian habitats for other Special Status Species in the Meadow Valley Wash would be implemented on a case-by-case basis. No special use restrictions or utilization levels, above BLM general standards and policy, would be established in the Meadow Valley Wash. Habitat management emphasis would be on the control and removal of tamarisk and other invasive weeds, and emergency stabilization for areas burned by wildfires. No prioritization of watersheds would be identified. Changes in the livestock season would be implemented by agreement only.

Alternative B

The Southwestern willow flycatcher recovery plan would be the basis of the ACEC management plans developed for the Lower Meadow Valley Wash (see Section 2.5.22.1). The habitat needs of the yellow-billed cuckoo, Meadow Valley Wash speckled dace, and desert sucker would be evaluated in conjunction with the Southwestern willow flycatcher Recovery Plan.

The Meadow Valley Wash, the Meadow Valley Wash North, Meadow Valley South, Clover Creek North, and Clover Creek South watersheds are all high priority for watershed analysis. Detailed management plans for these areas would be developed on the basis of these analyses. Livestock grazing would be excluded from the desert tortoise habitat areas of the Lower Meadow Valley Wash (Elgin south to Clark County).

Conservation and restoration of terrestrial and aquatic resources in the riparian corridor would be undertaken.

Alternative C

Management of the Lower Meadow Valley Wash would be similar to Alternative A except the Lower Meadow Valley Wash ACEC would be managed based on multiple-use objectives for increased forage production and developed and managed recreation (see Section 2.5.22.1). Baseline livestock utilization levels, special use restrictions, and season-of-use designations would not be enacted unless livestock were determined to be a causal factor for nonattainment of standards and guidelines, utilization, and special use.

Alternative D

Under Alternative D, the Lower Meadow Valley Wash would not be designated as an ACEC. Management of the Lower Meadow Valley Wash would emphasize the exclusion of discretionary uses of public lands and restoration of natural hydrology. Restoration for noxious/invasive plant species would occur. Wildlife habitat would primarily be managed passively and natural processes would be allowed to function and dictate the mosaics of wildlife habitats within Meadow Valley Wash.

Alternative E

The Southwestern willow flycatcher recovery plan would be the basis of the management plans developed for the Lower Meadow Valley Wash. The habitat needs of the yellow-billed cuckoo, Meadow Valley Wash speckled dace and desert sucker would be evaluated in conjunction with the Southwestern willow flycatcher Recovery Plan.

The Meadow Valley Wash, the Meadow Valley Wash North, Meadow Valley South, Clover Creek North, and Clover Creek South watersheds are all high priority for watershed analysis. Detailed management plans for these areas would be developed on the basis of these analyses. Livestock grazing would be excluded from the desert tortoise habitat areas of the Lower Meadow Valley Wash (Elgin south to Clark County).

Within the northern portion of the Lower Meadow Valley Wash, grazing would not be allowed in Southwestern willow flycatcher habitat at any time of the year in: 1) potential habitat (regenerating/restorable); and 2) occupied suitable habitats. In unoccupied suitable habitats, livestock grazing would be permitted in the non-growing season (October 15 through March 15) with appropriate stipulations.

The development of a Southwestern willow flycatcher Implementation Plan for Meadow Valley Wash would outline the schedule and procedures to determine if livestock are a causal factor for nonattainment of standards and guidelines.

2.5.7.5 Parameter – Mojave Desert Riparian Habitats

Special Status Species Included in RMP U.S. Fish and Wildlife Service Section 7 Consultation

White River springfish-(see Management Common to All Alternatives)

Hiko White River springfish-(see Management Common to All Alternatives)

Pahranagat roundtail chub-(see Management Common to All Alternatives)

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2.5.7.6 Parameter – Mojave Desert Scrub Habitats

Special Status Species Included in RMP U.S. Fish and Wildlife Service Section 7 Consultation

Desert tortoise-(see management actions below and Management Common to All Alternatives)

Banded Gila monster

Alternative A

Mojave Desert special status species and their habitats would receive protection from the restrictions and standard operating procedures developed for desert tortoise in the 2000 Caliente Management Framework Plan Amendment. Management actions would be assessed on a case-by-case basis.

Livestock grazing would be excluded from the desert tortoise ACECs and managed with special use restrictions within desert tortoise habitats outside the ACECs.

Alternative B

Same as Alternative A, except watershed analyses would evaluate if any potential exists for additional management, restrictions, or restoration actions to protect or enhance habitats.

Livestock grazing would be excluded from the remaining desert tortoise habitat outside the existing ACECs to protect and conserve Mojave Desert special status species (see **Map 2.4-39**).

Alternative C

Same as Alternative A.

Alternative D

Management of Mojave Desert special status species habitats would emphasize the exclusion of all discretionary uses.

Natural processes would be allowed to function and dictate the mosaics of special status species habitats within the Mojave Desert and other habitats managed by the Ely Field Office.

Alternative E

Same as Alternative B, except livestock grazing would be excluded from the desert tortoise ACECs and managed with special use restrictions within non-ACEC desert tortoise habitats.

2.5.7.7 Parameter – Mojave Desert Mountain and Desert Scrub Habitats

Special Status Species Included in RMP U.S. Fish and Wildlife Service Section 7 Consultation

Desert Bighorn Sheep

Alternative A

Desert bighorn sheep would be maintained in a percentage of their historic range and in portions of their current seasonal habitats. When changes to BLM grazing permits are being considered, domestic sheep would be managed in consideration of the Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats (Instruction Memorandum No-98-140).

Habitat management of high and low elevation habitats would occur indirectly and on a small scale through wildfire emergency stabilization projects.

Alternative B

Desert bighorn sheep would be managed in all historic ranges and in all historic seasonal habitats. Domestic livestock (sheep and cattle) grazing would be eliminated in all desert bighorn sheep ranges and migration routes.

High and low elevation habitat management would occur directly from active large-scale restoration and indirectly through wildfire emergency stabilization projects.

Alternative C

Desert bighorn sheep would be maintained in a percentage of their historic range and in portions of their current seasonal habitats. When changes to BLM grazing permits are being considered, domestic sheep would be managed in consideration of the Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats (Instruction Memorandum No-98-140).

Low elevation habitat management would occur directly from active large-scale restoration. High elevation habitats would not be managed for active restoration. Both high and low elevation habitats would be managed indirectly through wildfire emergency stabilization projects.

Alternative D

Conservation actions for desert bighorn sheep would emphasize the exclusion of discretionary uses of public lands.

Passive management would be emphasized over active management. Active habitat restoration for desert bighorn sheep would be emphasized only in areas affected by wildfires or where invasive species dominate.

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Alternative E

Management of desert bighorn sheep would be similar to Alternative A, except that no domestic sheep or goat grazing would be allowed within 9 miles of desert bighorn sheep habitat. The exception to this management direction would occur where topographic features or other barriers prevent physical contact between bighorn sheep and domestic sheep or goats.

High and low elevation habitat management would occur directly from active large-scale restoration and indirectly through wildfire emergency stabilization projects.

2.5.7.8 Parameter – Mojave and Great Basin Desert Scrub and Salt Desert Shrub Habitats

Special Status Species Included in RMP U.S. Fish and Wildlife Service Section 7 Consultation

Western burrowing owl

Alternative A

No proactive actions or assessments would occur. Western burrowing owl habitat would be managed as issues arise on a case-by-case basis.

Alternative B

Systematic breeding surveys would be conducted in cooperation with the Nevada Department of Wildlife in all potential western burrowing owl habitats. Occupied and unoccupied habitat conditions would be assessed and documented in conjunction with the watershed analysis process. Corrective management actions to improve or maintain habitats would be immediately implemented.

Alternative C

Same as Alternative A.

Alternative D

Western burrowing owl habitats would be primarily managed passively through the exclusion of discretionary uses of public lands.

Alternative E

Same as Alternative B.

2.5.7.9 Parameter – Great Basin Sagebrush Habitat

Special Status Species Included in RMP U.S. Fish and Wildlife Service Section 7 Consultation

Sage grouse (see Management Common to All Alternatives)

Pygmy rabbit (see Management Common to All Alternatives)

Alternative A

Greater sage-grouse would be considered an important BLM Sensitive Species and would be emphasized over other BLM Sensitive Species. Sage grouse management actions would be implemented based on potential projects identified through large-scale habitat estimates performed through the local sage grouse conservation plans.

Priorities for assessing and monitoring sage grouse habitat conditions in sagebrush communities would be established and would occur periodically or as more data becomes available, through the local sage grouse conservation plans. Long-term management actions for sage grouse would be implemented through future recommendations from local sage grouse planning teams or through actions identified through watershed analysis.

There would be no established approach or prioritization to maintain quality sagebrush habitats. Sagebrush habitat maintenance would be performed in consideration of the priorities identified in the BLM National Sage Grouse Conservation Strategy. Allowable sage grouse habitats uses would continue to be managed in consideration of best management practices, with blanket restrictions on surface disturbing activities and survey requirements as outlined in the Ely District management framework plans and activity plans.

Sage grouse habitat restoration would occur at a small scale and through various projects identified in the local sage grouse conservation plans. Sagebrush restoration would be centered on restoring potential sagebrush habitats encroached by pinyon or juniper and in consideration of the restoration priorities identified in the BLM National Sage Grouse Conservation Strategy. Allowable use restrictions would not exist for sagebrush habitats undergoing restoration. Livestock would be excluded from using wildfire restoration areas for a minimum of 2 years.

Alternative B

A balanced multiple species approach to greater sage-grouse management would be taken in which sage grouse needs would be balanced with the needs and priorities of all other BLM Sensitive Species. Until more specific mid-scale sage grouse habitat assessments or watershed analyses are performed, initial sage grouse management actions would occur through confirmation and revision of the priority projects identified in the local sage grouse conservation plans. Guidance provided in the BLM National Sage Grouse Habitat Conservation Strategy, would guide habitat management revisions to the local plans.

A coordinated and systematic large scale approach to assess District-wide sage grouse habitat conditions in sagebrush communities would be completed in conjunction with the watershed analysis process. These

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sage grouse habitat assessments in sagebrush communities would be performed independently of watershed analysis schedules and timelines. Management actions for sage grouse would be implemented through the actions identified in mid-scale habitat assessments and watershed analysis.

Intact and quality sagebrush habitat would be maintained. Habitat maintenance actions from the BLM National Sage Grouse Conservation Strategy would be prioritized to: 1) maintain large areas of high quality sagebrush which are currently occupied by sage grouse; 2) maintain habitats which connect seasonal sagebrush habitats in occupied source habitats; and 3) maintain habitats which connect seasonal sagebrush habitats in occupied isolated habitats. Allowable uses would be managed to maintain quality sage grouse habitats through implementation of best management practices and standard operating procedures in Appendix K. Livestock management would be adjusted to maintain quality habitats if livestock are determined to be a causal factors for nonattainment of standards through mid-scale sage grouse habitat assessments in sagebrush communities (due to be completed in 3 years from the RMP Record of Decision) or watershed analysis.

A proactive and large scale management approach would be implemented to restore lost, degraded, or fragmented sagebrush habitats and increase sage grouse populations. Habitat restoration actions from the BLM National Sage Grouse Conservation Strategy would be prioritized to: 1) reconnect large patches of high quality seasonal habitats, which sage grouse currently occupy; 2) enlarge sagebrush habitat in areas sage grouse currently occupy; 3) reconnect stronghold/source habitats currently occupied by sage grouse with isolated habitats currently occupied by sage grouse; 4) reconnect currently occupied and isolated habitats; 5) restore potential sagebrush habitats that are currently not occupied by sage grouse. Allowable use restrictions would be developed in sage grouse habitats undergoing restoration, on a case-by-case basis, as dictated by monitoring.

Alternative C

Management of greater sage-grouse habitat would be similar to Alternative A, except that sagebrush habitat restoration would be emphasized in areas that have the greatest potential to provide additional livestock forage, while stabilizing sage grouse populations. Restoration actions would focus on enlarging sagebrush habitat size in areas occupied by sage grouse and with potential for sage grouse in the future. Allowable use restrictions would be developed in sage grouse habitats undergoing restoration, on a case by-case basis, as dictated by monitoring. Intact and quality sagebrush habitats would require no actions for maintenance.

Alternative D

No BLM Sensitive Species goals would be of a higher profile or prioritized over other BLM Sensitive Species goals. Passive management would be emphasized over active management through the exclusion of all permitted commodity uses of public lands.

Assessment of habitat conditions for greater sage-grouse would be similar to those described under Alternative B, except that habitat assessment protocol would focus solely on performing inventories and identifying areas where direct human-induced alterations to the natural environment have altered the vegetation state.

Habitat maintenance would be limited to sagebrush habitats with adequate perennial understory or those habitats that are near the limits of the desired range of conditions. Sage grouse habitat maintenance would primarily be managed passively and indirectly through the exclusion of permitted uses of all public lands. No allowable use restrictions would be needed to maintain sage grouse habitats.

Restoration of sagebrush habitats would be on a very small scale and would be prioritized in nonnative or invasive areas and areas burned by wildfire. No allowable use restrictions would be needed. Sage grouse habitat would primarily be managed passively and indirectly through the exclusion of permitted commodity uses of all public lands.

Alternative E

Same as Alternative B, except that greater sage-grouse habitat needs would be utilized as a model for management in sagebrush communities. Sagebrush obligate BLM Sensitive Species would be considered in site specific analysis.

2.5.7.10 Parameter – Great Basin Salt Desert Shrub Habitat

Special Status Species Included in RMP U.S. Fish and Wildlife Service Section 7 Consultation
Sunnyside green gentian

Alternative A

Habitat of the Sunnyside green gentian would be managed on a case-by-case basis as issues arise.

Alternative B

A detailed monitoring and inventorying plan would be developed to monitor distributions and impacts to both known and potential habitats of Sunnyside green gentian within 5 years of the RMP Record of Decision.

Corrective actions to maintain, conserve, and restore the species would be implemented after the species distribution and habitats were evaluated.

Alternative C

Same as Alternative A.

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Alternative D

Special status plants and their habitats would primarily be managed passively through the exclusion of discretionary uses of public lands, allowing natural processes and disturbances to occur.

Alternative E

Same as Alternative B.

2.5.7.11 Monitoring of Special Status Species

In conjunction with other private, state, or federal agencies, the BLM would continue to monitor known populations of special status species that are considered to be important indicators or obligates to a particular habitat community type (such as greater sage-grouse for sagebrush communities). This monitoring would be accomplished by contract or with the aid of private, state, or federal employees. Monitoring could consist of intensive research projects or passive population inventories designed to help identify the extent of the populations and habitats being used. Inventories for special status species would be completed within the planning area. Information would be used to measure the effectiveness in meeting management objectives on a landscape level and watershed basis.

The BLM would periodically assess changes in vegetation communities (e.g., sagebrush, pinyon-juniper) from wildfire, prescribed fire, vegetation treatments, insect infestations, or other major influences by watershed. Where vegetation treatments are applied, the BLM would monitor results with photo and vegetation sampling that includes species and structural composition both before and after treatment, if possible. Habitat Assessments would be based on changes in size, composition, and health of vegetation communities. Special status species habitats would be evaluated periodically during Rangeland Health Assessments and after major catastrophic events such as large wildfires. Where necessary, recommendations would be made for protection or restoration of fragmented, damaged, or degraded habitats.

2.5.8 Wild Horses

Introduction

The Wild Free-roaming Horse and Burro Act of 1971 requires the BLM to protect and manage wild horse in areas where they were found at the time of the Act, in a manner designed to achieve and maintain a thriving natural ecological balance in keeping with the multiple use management concept of public lands. These requirements are further detailed in the Standards and Guidelines for Wild Horses and Burros developed by both the Northeastern Great Basin Resource Advisory Council and the Mojave/Southern Great Basin Resource Advisory Council.

Desired Range of Conditions

The desired range of conditions for this resource is that herds of wild horses would be at appropriate management levels within herd management areas where sufficient habitat resources exist to sustain populations at those levels. Herds would consist of healthy animals that exhibit diverse age structure, good conformation, and any characteristics unique to the specific herd.

Goal

Maintain and manage healthy and genetically viable wild horses inside herd management areas within appropriate management levels to ensure a thriving natural ecological balance while preserving a multiple use relationship with other uses and resources.

Management Common to All Alternatives

1. Adjustments to appropriate management levels would be based on monitoring data and done typically, but not exclusively, in conjunction with the watershed analysis process.
2. Domestic horse grazing permits would not be authorized within wild horse herd management areas.
3. Wild horse management would be coordinated with the other federal and state jurisdictions and resource management agencies.
4. Herd management areas would be identified from the original 29 herd areas based on wild horse use and habitat suitability (see **Map 2.4-1**).

2.5.8.1 Parameter – Herd Management Area Establishment

The original herd areas identified on the Ely District are shown on **Map 2.4-1**.

Alternative A

Wild horses would continue to be managed within the existing 24 herd management areas covering approximately 5.36 million acres (see **Map 2.4-2** and **Table 2.5-9**). The appropriate management level of wild horses is 2,141 animals (including the maximum number on some herd management areas where the appropriate management level is currently listed as a range).

Alternative B

Wild horses would be managed within six herd management areas listed in **Table 2.5-10** covering approximately 3.6 million acres. See **Map 2.4-3**. Herds would be removed and herd management area status would be dropped for those areas that do not provide adequate and suitable habitat (see Chapter 3.0,

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Table 2.5-9
Herd Management Areas Under Jurisdiction of the Ely Field Office

Herd Management Areas	Public Acres	Appropriate Management Level
Antelope	389,000	324
Applewhite	30,300	1
Blue Nose Peak	84,600	1
Buck and Bald	799,500	423
Butte	427,800	95
Cherry Creek	35,000	0
Clover Creek	33,000	1-14
Clover Mountains	168,000	1-16
Deer Lodge Canyon	105,300	30-50
Delamar Mountains	183,600	51-85
Diamond Hills South	19,500	22
Dry Lake	487,800	94
Highland Peak	136,100	20-33
akes Wash	153,700	1-21
Little Mountain	53,000	9-15
Meadow Valley Mountains	94,500	0
Miller Flat	89,400	9-15
Monte Cristo	369,800	236
Moriah	53,300	1-29
Rattlesnake	71,400	1
Sand Springs East	476,100	257
Seaman	358,800	159
White River	116,300	90
Wilson Creek	624,500	160
Totals	5,361,300	1,986-2,141

Table 2.5-10
Wild Horse Management Under Alternative B

Old Herd Management Areas	New Herd Management Area	Acres	Appropriate Management Level
Monte Cristo and Sand Springs East	Pancake	855,000	240-493
Buck and Bald, Butte, and portions of Cherry Creek	Triple B	1,225,000	250-518
Antelope	Antelope	331,000	150-324
Dry Lake, Portions of Rattlesnake and Highland Peak	Silver King	606,000	60-128
Wilson Creek and Deer Lodge Canyon	Eagle	670,000	100-210
Diamond Hills South	Diamond Hills South	19,000	10-22
	Total	3,705,000	810-1,695

Table 3.8-2). Herd management area boundaries would be revised to provide better management of wild horse populations. For example, Deer Lodge Canyon herd management area does not provide adequate habitat sustainability factors on its own (poor water habitat) but could be managed in combination with Wilson Creek to provide suitable year-round habitat. Similar combination would occur with Dry Lake, Rattlesnake, and Highland Peak. The appropriate management level would be managed as a range on all

herd management areas with a total appropriate management level between 810 and 1,695 animals within the District.

Alternative C

Same as Alternative B.

Alternative D

Wild horses would be managed within the same twenty-four herd management areas covering approximately 5.36 million acres as in Alternative A. No population limits would be established within these herd management areas.

Alternative E

Same as Alternative B.

2.5.8.2 Parameter – Population Management

Alternative A

Populations would be managed within existing appropriate management level ranges, where applicable. For areas with single appropriate management level numbers, gathers would occur when necessary to reduce the population approximately 40 percent below that number to allow for natural population growth before the next gather cycle.

Population growth rates of approximately 20 percent have been observed for several of the larger wild horse populations in the District. It is neither economically practical nor desirable from an animal stress and health standpoint to conduct annual gathers to remove excess animals. Hence, gathers of greater numbers of animals are typically conducted on 3- to 4-year cycles. At a 20 percent annual population growth rate, approximately 40 percent of the population would need to be removed every 3 years to prevent population growth beyond the upper appropriate management level. For populations with growth rates less than 20 percent, the population reduction at gathers would be less than 40 percent and the cycle time between gathers would be extended until the population level again reached the upper appropriate management level. This population range would ensure that a thriving natural ecological balance is obtained since wild horses would be managed in a manner designed to not exceed habitat limitations.

Alternative B

Populations would be managed within ranges of appropriate management levels in which the upper level would be based on available habitat and the lower level would be based on the projected recruitment rate between gather cycles as developed from herd monitoring data (see **Table 2.5-10**).

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Alternative C

Same as Alternative B.

Alternative D

Populations of wild horses within herd management areas would be unmanaged. Wild horses outside the herd management areas would be removed from public lands.

Alternative E

Same as Alternative B.

2.5.8.3 Parameter – Genetic Health/Viability

Alternative A

Wild horses would be managed within the existing herd management areas regardless of whether habitat conditions can support a long-term genetically viable population or not.

Alternative B

Wild horses would be managed in herd management areas only where habitat conditions can support a long-term genetically viable population.

Alternative C

Same as Alternative B.

Alternative D

Same as Alternative A.

Alternative E

Same as Alternative B.

2.5.8.4 Monitoring of Wild Horses

Aerial and ground census information would be gathered periodically to determine the number of adults and foals, colors, special characteristics, and overall health of each horse herd. Aerial counts would be done at a minimum of once every 3 years. Other herd data, including the ratio of mares to studs, age classes, colors, special characteristics, and overall health would be collected during gathers and at the time horses are processed for adoption. Wild horse actual use of forage would be estimated by multiplying inventoried or

estimated numbers of horses by the length of grazing period on their summer and winter ranges. Utilization and trend study methods are the same as applied in the monitoring section for Livestock Grazing Management. Data collected in other studies, such as monitoring of vegetation treatments, special status plants and animals, microbiotic crusts, wildlife, water resources, weeds, riparian, and wetland sources may be used to determine the effects of wild horses on these resources. Results and recommendations would be recorded in allotment evaluations or rangeland health assessments.

2.5.9 Cultural Resources

Introduction

Management of cultural resources is directed primarily by two laws: the National Historic Preservation Act of 1966, as amended, and the Archaeological Resources Protection Act of 1979. The National Historic Preservation Act requires management and enhancement of significant historic properties and the Archaeological Resources Protection Act requires protection of archaeological resources (sites and objects of 100 years or more in age). The Federal Land Policy and Management Act directs the Bureau of Land Management to manage public lands on the basis of multiple use and to "protect the quality of historical resources and archaeological values." This act provides for the periodic inventory of public lands and resources.

Desired Range of Conditions

Once identified, cultural resources on BLM-administered land would be protected and maintained in stable condition. Appropriate management actions would be determined after evaluation and allocation of cultural resource use categories through cultural resource project plans.

Goal

Identify, protect, and classify at-risk archaeological resources, significant historic properties, and cultural landscapes.

Management Common to All Parameters and All Alternatives

- One hundred percent of sites determined not eligible to the National Register of Historic Places would be allocated and managed as Discharged from Management Use.
- One hundred percent of the sites determined eligible to the National Register of Historic Places would be allocated and managed to Scientific, Public, and/or Conservation for Future Use. However, if another use becomes evident or proposed after use allocation has occurred, the use allocation may be changed without a plan amendment.
- Pending final approval of watershed, parameter, or site specific Cultural Resource Project Plans, inventory priorities would be directed to testing high-medium-low predictions found in archaeological

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predictive models, including the Gnomon forecast model developed for use in the Ely RMP/EIS (Gnomon 2004).

2.5.9.1 Parameter – Cultural Resource Use Allocation: Historic Roads, Trails, Railways, Highways, and associated Sidings and Stations

Examples: Pony Express National Historic Trail, California National Historic Trail, Lincoln Highway, Nevada Northern Railway, Pioche to Hamilton stage line, Elko to Hamilton stage line, Pioche to Toano stage line, Hill-Beachy mail line, Ackass mail line, Ackrabbitt Railroad, Bullionville-Pioche Railroad, Eureka to Hamilton stage line, Simpson's Route, Lost 49ers Trail, Georgetown Pioneer Trail, Oregon and California Telegraph line, General Land Office roads, etc.

Threats:

- County and BLM road improvement/maintenance activities
- Unauthorized activities
- Unrestricted off-highway vehicle use
- Sightseeing

Priorities for Inventory:

- Potential threats identified in Cultural Resource Project Plans
- Existing designated National Scenic and Historic Trails
- Routes under national study
- Routes determined eligible to the National Register

Management Actions:

- Management common to all cultural resource use allocations:
 - An intensive archaeological inventory of the corridor of each site would be done to establish baseline information on a priority basis as identified in Cultural Resources Project Plans.
 - An historic context report for each resource would be written on a priority basis as identified in Cultural Resource Project Plans.
 - Use of site stewards for monitoring would be encouraged.
- Scientific Use:
 - Road/trail/railway/highway related sites (e.g., stage stops, stage stations) would be inventoried and condition recorded on a priority basis as identified in Cultural Resources Project Plans.
 - Excavation would be allowed subject to management plan with appropriate research design (which conserves samples for future use).

2.5 Management Direction for Resource Programs

- Conservation for Future Use:
 - Informational signs would be posted at all major intersections along existing Public Use sites.
 - Excavation would be allowed subject to management plan with appropriate research design (which conserves samples for future use).
 - Road/trail/railway/highway related sites (e.g., stage stops, stage stations) would be inventoried and condition recorded.
- Public Use:
 - Informational signs would be posted at all major intersections along Public Use sites.
 - At least one kiosk, with interpretative panel, would be placed for each resource.
 - A driving guide would be developed and prepared for each resource on a priority basis as identified in Cultural Resources Project Plans.
 - National Register nominations would be completed for all Public Use sites on a priority basis as identified in Cultural Resource Project Plans.
 - If appropriate, linear features may be considered for Rail to Trails programs.

Alternative A

The cultural historic landscape (setting) around national historic trails would be managed according to the National Historic Preservation Act and memos Instruction Memorandum NV-2004-004 and Instruction Memorandum NV-2004-006. The area of direct effect around national historic trails is established as one mile from centerline, although in some cases, the area of effect may be larger or smaller than one mile from centerline. Designated national historic trails would be managed according to the National Scenic and Historic Trail Act (16 USC sections 1241-1251).

Historic roads, trails, railways, highways, and associated sidings and stations would continue to be managed for future Cultural Resource Use Allocations. No established fee sites.

Alternative B

The cultural historic landscape (setting) around national historic trails would be managed according to the National Historic Preservation Act and memos Instruction Memorandum NV-2004-004 and Instruction Memorandum NV-2004-006. The area of direct effect around national historic trails is established as one mile from centerline, although in some cases, the area of effect may be larger or smaller than one mile from centerline. Designated national historic trails would be managed according to the National Scenic and Historic Trail Act (16 USC sections 1241-1251).

One hundred percent of the National Register eligible historic roads, trails, railways, highways, and associated sidings and stations would be allocated and managed for Scientific, Conservation, and Public Use. No fee sites would be established.

National historic trails would be allocated to Public Use and should have Cultural Resource Project Plans prepared to better balance Public, Scientific, and Conservation Use.

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Alternative C

Same as Alternative B except fee sites would be established for all properties allocated and managed for Public Use.

Alternative D

Same as Alternative B except the BLM would allocate and manage 100 percent of the National Register eligible historic roads, trails, railways, highways, and associated sidings and stations for Conservation Use.

Alternative E

Same as Alternative B except fee sites would be established at Public Use sites as appropriate.

2.5.9.2 Parameter – Cultural Resource Use Allocation: Rock Art Sites

Examples: Shooting Gallery, Mount Irish, White River Narrows, Tunnel Canyon, Honeymoon Hill, Hendry's Creek, Christmas Wash, Ash Springs, Kern Mountains, etc.

Threats:

- Fire
- Vandalism
- Theft
- Prying off/cutting rock art panels
- Unauthorized activities
- Unrestricted off-highway vehicle use
- Sightseeing
- Recreational rock climbing

Priorities for Inventory:

- Potential threats identified in Cultural Resource Project Plans
- Those areas containing rock art identified for prescribed or managed natural wildfire
- Existing designated sites
- Sites determined eligible to the National Register

Management Actions:

- Management common to all cultural resource use allocations:
 - Any rock art site with evidence of public use would be allocated to Public Use.
 - Any rock art site with no evidence of public use would be allocated to Conservation Use and/or Scientific Use.

2.5 Management Direction for Resource Programs

- All rock art sites eligible to the National Register of Historic Places under Criterion c would be preserved in place and would not be discharged from management.
- Best and most accurate technologies available would be used to photograph and gather locational information at all rock art panels (for example, digital photographs and GPS readings with position error no greater than 20 feet).
- Detailed measured drawings and sub-meter global positioning system locations would be taken of all panels visible from footpath.
- Scientific use would be allowed subject to management plans which minimize physical damage to rock art.
- Condition monitoring of all rock art sites would be conducted on at-risk/threatened rock art sites annually.
- Livestock and human contact with rock art panels would be limited through physical barriers (fences or natural barriers such as plantings or boulder placement).
- Emergency stabilization would be allowed if natural or cultural threats are causing loss of integrity to rock art.
- Fire potential would be evaluated and fuels removed where there is threat of loss.
- Use of site stewards for monitoring would be encouraged.
- Scientific Use:
 - Surface collection of artifacts on non-rock art portions of sites may be permitted under the Archaeological Resources Protection Act of 1979 if there is threat of loss or destruction.
- Public Use:
 - Informational signs on rock site etiquette and the Archaeological Resources Protection Act of 1979 would be posted at all Public Use sites.
 - Site-specific recreation management plans/interpretative plans would be developed for all Public Use rock art sites before implementing Cultural Resource Project Plan actions.
 - At least one interpretative trail/footpath would be designated and marked in each rock art site allocated to Public Use.
 - Visitor registers would be installed at all Public Use sites.

Alternative A

The Ely Field Office would manage cultural resources for future resource use allocations, continue to develop interpretative sites at White River Narrows and Mount Irish, and conduct a Class II inventory of areas identified as high potential for aboriginal site occurrence.

No established fee sites.

Alternative B

One hundred percent of the National Register eligible rock art sites would be allocated and managed for Scientific, Conservation, and/or Public Use, and development of interpretative sites would be continued with priority placed on maintaining and improving existing interpretative facilities.

2.0 ALTERNATIVES

No fee sites would be established.

Alternative C

One hundred percent of the National Register eligible rock art sites with no evidence of public use would be allocated and managed for Conservation Use and development of interpretative sites would be continued with priority placed on maintaining and improving existing interpretative facilities.

National Register eligible rock art sites managed for Public Use would be established as fee sites. American Indians would be exempt from fees only when visiting rock art sites for religious practices.

Alternative D

One hundred percent of the National Register eligible rock art sites with evidence of existing public use would be allocated and managed for Public Use. The remainder of the National Register eligible rock art sites, with no evidence of public use, would be managed for Scientific and/or Conservation Use.

No fee sites would be established.

Alternative E

Same as Alternative B except fee sites would be established at Public Use rock art sites as appropriate. American Indians would be exempt from fees only when visiting rock art sites for religious practices.

2.5.9.3 Parameter – Cultural Resource Use Allocations: Historic Townsites, Historic Mining Camps, Historic Mining Districts, and related Historic Buildings & Standing Structures, and Historic Racetracks

Examples: Delamar, Osceola, Ward, Blackhorse, Hogum, Cherry Creek, Carbonari sites, Pioche tramway, Crescent Mill, Panaca Charcoal Ovens, Osceola Ditch, etc.

Threats:

- Vandalism
- Unauthorized activities
- Fire
- Authorized mining/mineral material activities
- Unrestricted off-highway vehicle use
- Lands/Realty actions
- Illegal trespass and squatting
- Sightseeing

Priorities for Inventory:

- Potential threats identified in Cultural Resource Project Plans
- Those areas containing historic townsites, mining camps, mining districts, buildings, standing structures and historic racetracks identified for prescribed or managed natural wildfire
- Existing designated sites
- Sites determined eligible to the National Register

Management Actions:

- Management common to all cultural resource use allocations:
 - Standing structures would be stabilized or rehabilitated on a priority basis as identified in Cultural Resources Project Plans.
 - An historic context report and a historic structure report would be written for each mining district based on priorities identified in Cultural Resource Project Plans.
 - An intensive archaeological inventory of the resource (townsite, camp, or district) would be completed for baseline information based on priorities identified in Cultural Resource Project Plans.
 - Level I documentation (see Secretary of the Interior's Standards and Guidelines for architecture) on all standing structures would be done for baseline information based on priorities identified in Cultural Resource Project Plans.
 - Fire potential would be evaluated and fuels would be removed where there is threat of loss.
 - Use of site stewards for monitoring would be encouraged.
- Scientific Use:
 - Excavation would be allowed subject to management plan with appropriate research design (which conserves samples for future use).
 - Signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 would be posted as appropriate.
 - Surface collection of artifacts may be permitted under the Archaeological Resources Protection Act of 1979 if there is threat of loss or destruction.
 - Data recovery would be permitted in those instances where future protection is not feasible.
- Conservation for Future Use:
 - Excavation would be allowed subject to management plan with appropriate research design (which conserves samples for future use).
 - Signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 would be posted as appropriate.
 - Stabilization and/or rehabilitation of standing structures would be done on a priority basis as identified in Cultural Resource Project Plans.
- Public Use:
 - At least one kiosk with interpretation panel would be placed for each resource.
 - Site-specific information brochures would be developed for all Public Use sites.

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- National Register nominations would be completed for all Public Use sites based on priorities developed in Cultural Resource Project Plans.
- Preservation and reuse of historic buildings would be considered as appropriate.

Alternative A

The Ely Field Office would manage for future Cultural Resource Use Allocations and would inventory the Delamar townsite and cemetery for its cultural and historical values.

No established fee sites.

Alternative B

One hundred percent of the National Register eligible sites with evidence of unauthorized excavation would be allocated and managed for Conservation Use and/or Scientific Use in order to perform data recovery in those instances where future protection is not feasible. The remaining National Register eligible sites would be allocated and managed for Scientific and/or Public Use.

One hundred percent of the National Register eligible sites with standing structures would be allocated and managed for Conservation Use.

No fee sites would be established.

Alternative C

One hundred percent of the National Register eligible sites with standing structures or evidence of vandalism would be allocated and managed for Public Use and all other National Register eligible sites would be allocated and managed for Scientific and/or Conservation Use.

Fee sites would be established at Public Use sites as appropriate.

Alternative D

One hundred percent of the National Register eligible sites would be allocated and managed for Conservation Use.

No fee sites would be established.

Alternative E

Same as Alternative B except that the BLM would allocate and manage 100 percent of the National Register eligible sites with standing structures for Conservation and/or Public Use.

Fee sites would be established at Public Use sites as appropriate.

2.5.9.4 Parameter – Cultural Resource Use Allocations: Historic Cemeteries and Isolated Historic Gravesites

Examples: Aurum, Rice Family Cemetery, Fort Pierce/Egan Canyon, Osceola, Ward, Delamar, Helene, Bristol Well, etc.

Threats:

- Fire
- Vandalism
- Theft of gravestones, wrought iron fencing, and related features
- Unauthorized activities
- Unrestricted off-highway vehicle use
- Grave deterioration
- Vegetation encroachment
- Sightseeing

Priorities for Inventory:

- Potential threats identified in Cultural Resource Project Plans
- Those areas containing historic cemeteries or isolated gravesites identified for prescribed or managed natural wildfire
- Existing designated sites
- Sites determined eligible to the National Register

Management Actions:

- Management common to all cultural resource use allocations:
 - Preservation in place and emergency stabilization would be allowed if natural or cultural threats are causing loss of integrity to cemetery (including wood treatment and stone repair).
 - Historic context report and equivalent of historic structure report would be written for all cemeteries based on priorities identified in Cultural Resource Project Plans.
 - Level I documentation would be compiled based on priorities identified in Cultural Resource Project Plans.
 - Fire potential would be evaluated and fuels would be removed where there is threat of loss.
 - Visitor registers would be installed and informational brochures would be created.
 - A fence or physical barriers (planned) would be installed.
 - Physical protection of historic cemeteries and isolated gravesites would be emphasized in the Cultural Resource Project Plans.
 - Appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 would be posted.

2.0 ALTERNATIVES

- Use of site stewards for monitoring would be encouraged.
 - If established, allocate and manage for Traditional Use.
- Scientific Use:
 - No scientific excavation of cemeteries except in those instances where physical disturbance is unavoidable and scientific study of human remains and associated funerary objects, and/or burial patterns, may be appropriate in order to answer questions about demography, health, and/or status, as well as site significance.
- Public Use:
 - National Register nominations would be prepared for those that meet the National Register criteria.
- Discharged from Management:
 - Discharge from Management under the Act of June 14, 1926, commonly known as the Recreation and Public Purposes Act to a public (government) body that would maintain historic character.

Alternative A

The Ely Field Office would manage cultural resources for future Resource Use Allocations.

No established fee sites.

Alternative B

One hundred percent of the sites would be managed for Conservation Use.

No fee sites would be established.

Alternative C

One hundred percent of the sites would be allocated and managed for Public Use.

Fee sites would be established at Public Use sites as appropriate.

Alternative D

Same as Alternative B.

Alternative E

One hundred percent of the sites would be allocated and managed for Conservation and/or Public Use.

Fee sites would be established at Public Use sites as appropriate.

**2.5.9.5 Parameter – Cultural Resource Use Allocations: Ethnic Arboreal
Narratives and Graphics and Bow Stave Trees**

Threats:

- Natural deterioration and weathering
- Fire
- Sightseeing
- Vandalism
- Unauthorized activities

Priorities for Inventory:

- Potential threats identified in Cultural Resources Project Plans
- Those areas containing aspen stands identified for prescribed or managed natural wildfire
- Oldest aspen groves with known carvings
- Existing designated sites
- Sites determined eligible to the National Register

Management Actions:

- Management common to all cultural resource use allocations:
 - Detailed recordation of all arboreal narratives, graphics, and bow stave trees would occur on a priority basis as identified in Cultural Resource Project Plans. Recordation would include, for example, detailed measured drawings, digital photographs, and sub-meter global positioning system locational information.
 - Fire potential would be evaluated and fuels would be removed where there is threat of loss.
 - Management plan and National Register nomination addressing collection/curation policy for specimens would be developed.
 - A reconnaissance inventory of all threatened aspen stands would be performed based on priorities identified in Cultural Resource Project Plans.
 - Appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 would be posted.
 - Use of site stewards for monitoring would be encouraged.

Alternative A

The Ely Field Office would manage cultural resources for future Resource Use Allocations.

Alternative B

One hundred percent of the National Register eligible sites would be allocated and managed for Scientific Use while promoting public access.

2.0 ALTERNATIVES

Alternative C

Same as Alternative B.

Alternative D

One hundred percent of the National Register eligible sites would be allocated and managed for Conservation Use.

Alternative E

Same as Alternative B.

2.5.9.6 Parameter – Cultural Resource Use Allocations: Paleoindian Sites

For the purposes of this RMP, the term Paleoindian would be defined as follows: Paleoindian or Pre-Archaic has been attributed to include both fluted and stemmed complexes as well as being reserved for complexes containing fluted points and extinct megafauna. The term Paleoindian would be used here to denote archeological sites and artifact assemblages dating between 12,000 to 8,000 years Before Present, which include fluted or stemmed points, and possibly crescents. Under this broad Paleoindian umbrella there are several local traditions and possible variants that may represent different peoples using the land in different ways. This includes Clovis, Folsom, Western Pluvial Lakes Tradition, and Stemmed Complex." (Sherve 2001:1).

Examples: Tri-County Paleo Site, Sunshine Locality, dkes Valley site, etc.

Threats:

- Vandalism
- Unauthorized activities
- Energy/Mineral Exploration
- Road development
- Unrestricted off-highway vehicle use

Priorities for Inventory:

- Potential threats identified in Cultural Resource Project Plans
- Existing designated sites
- Sites determined eligible to the National Register

2.5 Management Direction for Resource Programs

Management Actions:

- Management common to all allocations:
 - Due to sensitivity, no sites would be allocated to public use, unless there is a better option to conserve the site.
 - National Register nominations would be completed for all sites on a priority basis as identified in Cultural Resource Project Plans.
 - Level 1 documentation would be compiled for baseline information based on priorities developed in Cultural Resource Project Plans.
 - Partnerships would be developed to encourage scientific research on Paleoindian sites in the Ely District.
 - Research and preservation potential would be addressed in Cultural Resource Project Plans.
 - Site recordation would include, for example, collection of sub-meter global positioning system locational information of all diagnostic Paleoindian tools when located.
 - Use of site stewards for monitoring would be encouraged.
- Scientific Use:
 - Excavation would be allowed subject to management plan with appropriate research design (which conserves samples for future use).
- Conservation Use:
 - Appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 would be posted where evidence of unauthorized collection is evident.
 - Annual monitoring of all Paleoindian sites would be conducted on a priority basis as identified in Cultural Resource Project Plans.
 - Activities that do not have direct impacts to the integrity of the sites would be allowed.

Alternative A

The Ely Field Office would manage cultural resources for future Resource Use Allocations.

Alternative B

One hundred percent of the National Register eligible sites would be allocated and managed for Scientific and/or Conservation Use.

Alternative C

Same as Alternative B.

Alternative D

One hundred percent of the National Register eligible sites would be allocated and managed for Conservation Use.

2.0 ALTERNATIVES

Alternative E

Same as Alternative B.

2.5.9.7 Parameter – Cultural Resource Use Allocations: Formative Puebloan Sites

Examples: Baker Archaeological Site, Garrison, Daub Site, Sand Dune Site, etc.

Threats:

- Vandalism (collecting, illegal excavation)
- Unauthorized activities
- Lands Disposals
- Unrestricted off-highway vehicle use

Priorities for Inventory:

- Potential threats identified in Cultural Resource Project Plans
- Existing designated sites
- Sites determined eligible to the National Register

Management Actions:

- Management common to all cultural resource use allocations:
 - Fire potential would be evaluated and fuels would be removed where there is threat of loss.
 - Preserve in place and emergency stabilization would be allowed if natural or cultural threats are causing loss of integrity to sites.
 - Appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 would be posted.
 - Partnerships to encourage scientific research on formative Puebloan sites would be developed.
 - Annual monitoring of all formative Puebloan sites would be conducted based on priorities developed in Cultural Resource Project Plans.
 - No more than one site per watershed would be allocated to Public Use.
 - Scientific, Conservation, and Public Use, as well as public participation in research on formative puebloan sites would be addressed in Cultural Resource Project Plans.
 - Puebloan sites would be protected from vehicular traffic in the event of fire on or near the sites.
- Scientific Use:
 - Excavation/scientific research would be allowed subject to management plan with appropriate research design (which maximizes conservation of the site for future use and also maximizes public participation in the research).

2.5 Management Direction for Resource Programs

- Conservation for Future Use:
 - Appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 would be posted only where public knowledge is inevitable.
- Public Use:
 - Visitor registers would be installed and informational brochures would be created based on priorities established in Cultural Resource Project plans.
 - Specific recreation management plan/interpretative plan would be developed for all formative Puebloan sites developed for Public Use.
 - All sites allocated to Public Use would have surface collection of artifacts prior to Public Use designation.

Alternative A

The Ely Field Office would manage for future Cultural Resource Use Allocations.

No established fee sites.

Alternative B

One hundred percent of the National Register eligible sites would be allocated and managed for Scientific and/or Conservation Use, while maintaining existing Public Use sites.

Fee sites would be established at Public Use sites as appropriate.

Alternative C

One hundred percent of the National Register eligible sites would be allocated and managed for Scientific, Conservation, and/or Public Use, with no more than one site per watershed managed for Public Use.

Fee sites would be established at Public Use sites as appropriate.

Alternative D

Same as Alternative B except no fee sites would be established.

Alternative E

Same as Alternative B.

2.0 ALTERNATIVES

2.5.9.8 Parameter – Cultural Resource Use Allocations: Rockshelter and Cave Sites

Examples: Newark Cave, O'Malley Cave, Cave Valley Cave, Etna Cave, Mormon Mountains caves/rockshelters, etc.

Threats:

- Vandalism
- Fire (wildfires and campfires)
- Recreational rock climbing
- Spelunking
- Unrestricted off-highway vehicle use

Priorities for Inventory:

- Potential threats identified in Cultural Resource Project Plans
- Those areas containing rockshelters identified for prescribed or managed natural wildfire
- Existing designated sites
- Sites determined eligible to the National Register

Management Actions:

- Management common to all cultural resource use allocations:
 - Fire potential would be evaluated and fuels would be removed where there is threat of loss.
 - Preserve in place and allow emergency stabilization if natural or cultural threats are causing loss of integrity to sites.
 - Appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 would be posted where evidence of ongoing public use exists.
 - Conduct a Class II inventory of areas identified as high potential for aboriginal site occurrence on a priority basis as identified in Cultural Resource Project Plans.
 - Use of site stewards for monitoring would be encouraged.
- Scientific Use:
 - Partnerships which assist the BLM in evaluating loss of scientific data due to vandalism and in estimating cost of restoration and repair would be encouraged.
 - Partnerships for excavation/scientific research would be developed to assist the BLM to understand the paleo-environmental record.
- Conservation for Future Use:
 - Cost of restoration and repair would be evaluated as soon as vandalism is detected.

Alternative A

The Ely Field Office would manage for future Cultural Resource Use Allocations.

No established fee sites.

Alternative B

One hundred percent of the National Register eligible sites would be allocated and managed for Scientific, and/or Conservation Use while maintaining existing Public Use sites.

No fee sites would be established.

Alternative C

One hundred percent of the National Register eligible sites would be allocated and managed for Scientific, Conservation, and/or Public Use.

No more than one fee site per watershed would be established for sites managed for Public Use.

Alternative D

One hundred percent of the National Register eligible sites would be allocated and managed for Conservation Use while maintaining existing Public Use sites.

No fee sites would be established.

Alternative E

Same as Alternative B except fee sites would be established at Public Use sites as appropriate.

2.5.9.9 Parameter – Cultural Resource Use Allocations: Prehistoric Complex Sites, Campsites, or Specialized Activity Areas

Examples: Garden Valley, Coal Valley, Park Range, Panaca Summit, etc.

Threats:

- Vandalism
- Unauthorized Activities
- Water Improvements
- Recreational Camping

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- Unrestricted off-highway vehicle use
- Fire

Priorities for Inventory:

- Potential threats identified in Cultural Resource Project Plans
- Existing designated sites
- Sites determined eligible to the National Register

Management Actions:

- Management common to all cultural resource use allocations:
 - Fire potential would be evaluated and fuels would be removed where there is threat of loss.
 - Appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 would be posted where evidence of public use exists.
 - Cultural Resource Project Plans would be developed that further define this class of sites and clarify acceptable management actions.
 - Excavation would be allowed subject to management plan with appropriate research design (which conserves samples for future use).
 - All sites initially allocated to Conservation, Scientific, Experimental, or Discharged from Management Use would be subject to site-specific activity plans that preserve portions of the sites for future use.
 - Use of site stewards for monitoring would be encouraged.
- Scientific use:
 - National Register nominations would be completed for all sites allocated to Scientific Use on a priority basis as identified in Cultural Resource Project Plans.
- Public use:
 - Continue to produce materials and programs on "Leave What You Find" principles and environmental ethics.
 - A brochure covering the topic "What Do You Do If You Find an Artifact?" would be developed and produced.

Alternative A

The Ely Field Office would manage cultural resources for future Resource Use Allocations and a Class II inventory of areas identified as high potential for aboriginal site occurrence would be conducted.

Alternative B

Ninety percent of the National Register eligible sites would be allocated and managed for Conservation and/or Scientific Use and up to 10 percent of the sites per watershed would be allocated and managed for Experimental Use.

Alternative C

Seventy percent of the National Register eligible sites would be allocated and managed for Conservation and/or Scientific Use and up to 30 percent of the sites per watershed would be allocated and managed for Experimental Use.

Alternative D

One hundred percent of the National Register eligible sites would be allocated and managed for Scientific and/or Conservation Use.

Alternative E

Same as Alternative B.

2.5.9.10 Parameter – Cultural Resource Use Allocations: Toolstone Sources or Quarries

Examples: Tempaiute, Modena, Mahoney Canyon, Kane Springs, etc.

Threats:

- Collecting
- Unauthorized Activities
- Unrestricted off-highway vehicle use
- Rockhounding
- Fire

Priorities for Inventory:

- Potential threats identified in Cultural Resource Project Plans
- Existing designated sites
- Sites determined eligible to the National Register

Management Actions:

- Management common to all cultural resource use allocations:
 - Fire potential would be evaluated and fuels would be removed where there is threat of loss.
 - Appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 would be posted where evidence of public use exists.
 - Cultural Resource Project Plans would be developed that include addressing mineral collection of non-artifacts from quarry/source locations.
 - Photographic monitoring for all obsidian sources would be implemented.

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- Use of site stewards for monitoring would be encouraged.
- Scientific use:
 - National Register nominations would be completed for all sites allocated to Scientific Use on a priority basis as identified in Cultural Resource Project Plans.
- Public use:
 - A brochure that would enable the public to distinguish between artifacts and mineral specimens would be developed and produced.

Alternative A

The Ely Field Office would manage for future Cultural Resource Use Allocations and a Class II inventory of areas identified as high potential for aboriginal site occurrence would be conducted.

Alternative B

One hundred percent of the National Register eligible obsidian toolstone sources/quarries would be allocated and managed for Scientific and/or Conservation Use; 90 percent of all other National Register eligible material sources/quarries would be allocated and managed for Scientific and/or Conservation Use; and up to 10 percent of all other National Register eligible material sources/quarries would be allocated and managed for Experimental Use.

Alternative C

One hundred percent of the National Register eligible obsidian toolstone sources/quarries would be allocated and managed for Scientific and/or Conservation Use; 70 percent of all other National Register eligible material sources/quarries would be allocated and managed for Scientific and/or Conservation Use; and up to 30 percent of all other National Register eligible material sources/quarries per watershed would be allocated and managed for Experimental Use.

Alternative D

One hundred percent of the National Register eligible toolstone sources/quarries would be allocated and managed for Conservation and/or Scientific Use.

Alternative E

Same as Alternative B.

2.5.9.11 Parameter – Cultural Resource Use Allocations: Historic Ranching & Livestock Related Historic Sites, Buildings, Standing Structures, and Landscapes

Examples: Antelope Valley sheep camps, Civilian Conservation Corps erosion check dams, Civilian Conservation Corps camps, etc.

Threats:

- Fire
- Vandalism
- Unauthorized activities
- Rural sprawl

Priorities for Inventory:

- Potential threats identified in Cultural Resource Project Plans
- Existing designated sites
- Sites determined eligible to the National Register

Management Actions:

- Management common to all cultural resource use allocations:
 - Fire potential would be evaluated and fuels would be removed where there is threat of loss.
 - Appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 would be posted where evidence of public use exists.
 - Historic context reports would be written on a priority basis as identified in Cultural Resource Project Plans.
 - Historic structure reports would be written on a priority basis as identified in Cultural Resource Project Plans.
 - Level I documentation (see Secretary of the Interior's Standards and Guidelines for architecture) on all standing structures would be completed on a priority basis as identified in Cultural Resource Project Plans.
 - Photo documentation of historic features and landscapes would be obtained.
 - Use of site stewards for monitoring would be encouraged.
- Scientific Use
 - Excavation would be allowed subject to management plan with appropriate research design (which conserves samples for future use.)
- Conservation Use:
 - Conservation of the setting would be emphasized.
 - Stabilization and/or rehabilitation of standing structures would be done on a priority basis as identified in Cultural Resource Project Plans.

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- Discharged from management:
 - Subsequent to scientific use, when preservation in place is impractical, sites may be discharged.
- Public Use:
 - National Register nominations would be completed for all Public Use sites on a priority basis as identified in Cultural Resource Project Plans.
 - Standing structures would be considered for adaptive uses.

Alternative A

The Ely Field Office would manage for future Cultural Resource Use Allocations.

Alternative B

Up to one site per watershed would be allocated and managed for Public Use. All of the National Register eligible sites would be allocated and managed for Scientific Use.

Alternative C

Same as Alternative B.

Alternative D

Up to one site per watershed would be allocated and managed for Public Use. All of the National Register eligible sites would be allocated and managed for Conservation Use.

Alternative E

Same as Alternative B.

2.5.9.12 Parameter – Cultural Resource Use Allocations: Ethnohistoric Sites, Sacred Sites, Traditional Use Areas, Traditional Cultural Properties

Examples: Ethnohistoric sites identified in Steward (1938), Bengston (2003), and/or Ely RMP/EIS ethnographic study. No Sacred Sites, Traditional Use Areas, or Traditional Cultural Properties have yet been identified in the Ely District. This, however, does not preclude that they may be identified in the future.

Threats:

- Unverified locations leading to inadvertent damage
- Rural sprawl

Priorities for Inventory:

- Potential threats identified in Cultural Resource Project Plans
- Sites determined eligible to the National Register
- Existing designated sites

Management Actions:

- Management common to all cultural resource use allocations:
 - When identified, locations and boundaries of Ethnohistoric Sites, Sacred Sites, Traditional Use Areas, and Traditional Cultural Properties would be verified with Global Positioning Systems.
 - When identified, Ethnohistoric Sites, Sacred Sites, Traditional Use Areas, and Traditional Cultural Properties would be recorded.
 - Fire potential would be evaluated and fuels would be removed where there is threat of loss.
 - National Register nominations would be completed on a priority basis as identified in Cultural Resource Project Plans.
 - Pending approval of Cultural Resource Project Plans, all sites would be allocated to Conservation use.
 - Use of site stewards for monitoring would be encouraged.

Alternative A

The Ely Field Office would manage for future Cultural Resource Use Allocations.

The Snake Creek Indian Burial Cave would receive partial protection under the Fire Management Action Modification Plan.

Alternative B

One hundred percent of the National Register eligible Ethnohistoric Sites would be allocated and managed primarily for Conservation Use unless subject to Cultural Resource Project Plans.

If Traditional Cultural Properties are identified, 100 percent would be allocated and managed primarily for Traditional Use.

If Sacred Sites or Traditional Use Areas are identified, 100 percent would be allocated and managed for Conservation Use.

Alternative C

Same as Alternative B.

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Alternative D

Same as Alternative B.

Alternative E

Same as Alternative B.

2.5.9.13 Parameter – Cultural Resource Use Allocations: “Other” Sites

Other” is defined as those sites not falling into any of the above 12 site types. Examples: agave roasting pits, antelope wall, intaglios, or geoglyphs, historic debris scatters or other features not associated with mining or ranching, etc.

Threats:

- Vandalism
- Unauthorized Activities
- Unrestricted off-highway vehicle use

Priorities for Inventory:

- Potential threats identified in Cultural Resource Project Plans
- Existing designated sites
- Sites determined eligible to the National Register

Management Actions:

- Management common to all cultural resource use allocations:
 - Fire potential would be evaluated and fuels would be removed where there is threat of loss.
 - Appropriate signs with information on site etiquette and the Archaeological Resources Protection Act of 1979 would be posted where evidence of public use exists.
 - Use of site stewards for monitoring would be encouraged.
- Public use:
 - Due to sensitivity of some of these resources, public use on these sites (excluding the agave roasting pits) may be monitored.

Alternative A

The Ely Field Office would manage for future Cultural Resource Use Allocations and a Class II inventory of areas identified as high potential for aboriginal site occurrence would be conducted.

Alternative B

One hundred percent of the National Register eligible sites would be allocated and managed for Scientific and/or Conservation Use with public use being monitored. Scientific Use would be permitted if it does not destroy features.

All of the agave roasting pits would be allocated to Scientific, Conservation, and/or Public Use.

Alternative C

Same as Alternative B.

Alternative D

One hundred percent of the National Register eligible sites would be allocated and managed for Conservation Use with public use being monitored.

Alternative E

Same as Alternative B.

2.5.9.14 Monitoring of Cultural Resources

Continue on-the-ground monitoring, with assistance from the Nevada Heritage Site Stewardship Program and/or other volunteer groups, of identified sites to determine condition, impacts, deterioration, and use of such sites. The condition of the sites and other data collected would be entered into the cultural database. If a site is listed on or is eligible to the National Register of Historic Places, consultation with the State Historic Preservation Office would be conducted, when necessary, to determine the appropriate action to stop the deterioration of the site or to assist with mitigation. Monitor the effectiveness of presentations to the public, educational brochures, interpretative materials, informational materials and displays, scientific research collections and materials, and the site steward program. Monitor the effectiveness of archaeological predictive models developed to assist the BLM in predicting site locations and densities.

2.5.10 Paleontological Resources

Introduction

The BLM has authority to manage and protect paleontological resources under the Federal Land Policy and Management Act of 1976, NEPA, and various sections of Part 43 of the Code of Federal Regulations.

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Desired Range of Conditions

The Ely Field Office would manage fossil sites with high scientific value, while allowing appropriate research and casual public collecting.

Goal

Identify and manage at-risk paleontological resources (scientific value); preserve and protect vertebrate fossils through best science methods; and promote public and scientific use of invertebrate and paleobotanical fossils.

Management Common to All Parameters and All Alternatives

- One hundred percent of the vertebrate sites would be allocated and managed for Scientific Use.
- One hundred percent of the invertebrate and paleobotanical sites would be allocated and managed for Public and/or Scientific Use.
- If another use is evident or proposed, then the use allocation may be changed without a plan amendment.

2.5.10.1 Parameter – Trilobite Collecting

Threats:

- Illegal commercial collecting of trilobites
- The collection of far more trilobites than is considered "reasonable quantities" for personal use
- Increased demand for vertebrate and invertebrate fossils
- Casual-use and collection of invertebrate fossils by "rockhounds" and fossil collectors has contributed to the loss of the resource and its research potential and interpretation

Priorities for Inventory:

- Predicted threats identified in Cultural Resource Project Plans
- Existing designated sites

Alternative A

No registration system would be in place for trilobite collecting.

Alternative B

A no-fee-based registration system would be established.

Alternative C

A fee-based registration system would be established.

Alternative D

All trilobite locations would be closed to collecting.

Alternative E

Same as Alternative B.

2.5.10.2 Monitoring of Paleontological Resources

Monitor paleontological resource sites to determine site conditions and mitigation needs.

2.5.11 Visual Resources

Introduction

Section 102(8) of the Federal Land Policy and Management Act declares that public land will be managed to protect the quality of scenic values and, where appropriate, to preserve and protect certain public land in its natural condition. NEPA, section 101(b), requires federal agencies to "... assure for all Americans ... esthetically pleasing surroundings." Section 102 of NEPA requires agencies to "... utilize a systematic, interdisciplinary approach which will ensure the integrated use of ... Environmental Design Acts in the planning and decision making ... process. Guidelines for the identification of visual resource management classes on public land are contained in BLM Manual Handbook 8410-1, Visual Resource Inventory.

See Section 3.11 for a description of VRM classifications. The establishment of visual resource management classes on public land is based on an evaluation of three primary components: scenic quality, public sensitivity analysis, and a delineation of distance zones based on key observation points (e.g., state and national parks, recreation sites, etc.).

Visual resource management class objectives are defined as follows:

Class I Objective. The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude very limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

Class II Objective. The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should

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not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class III Objective. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class IV Objectives. The objective of this class is to provide for management activities which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

Desired Range of Conditions

Multiple use activities within the planning area would be consistent with the visual resource management classes established in the RMP.

Goal

Manage public land actions and activities consistent with District visual resource management class objectives.

Management Common to All Alternatives

1. Public land actions and activities would consider the objectives established for visual resource management classes.
2. Designated wilderness, Wilderness Study Areas, and some special designation areas such as Areas of Critical Environmental Concern for Scenic Qualities would be managed under Visual Resource Management Class I objectives.
3. Should a Wilderness Study Area be released by Congress, it would revert to the baseline visual resource inventory class.

Alternative A

Visual resources would be managed in accordance with the following visual resource management classes (see Map 2.4-4).

Class I: 1,092,388 acres
Class II: 326,240 acres
Class III: 723,710 acres

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Class IV: 5,610,161 acres

No Visual Resource Management Class: 3,633,497 acres

Management would continue under the existing visual resource management classes for the Schell and Caliente resource areas. The Egan Resource area would establish visual resource management classes at the site-specific project level.

Alternative B

Visual resources would be managed in accordance with the following visual resource management classes (see **Map 2.4-5**).

Class I: 1,072,261 acres

Class II: 2,515,215 acres

Class III: 4,960,002 acres

Class IV: 2,838,518 acres

This alternative differs from Alternative C in that it includes Class II areas in the Garden Valley Special Recreation Management Area. Garden Valley is one of the few pristine, scenic valleys remaining in Nevada. It is surrounded by the Quinn Canyon, Grant, Worthington, and Golden Gate ranges and combined with those ranges, provides an excellent example of Nevada's Basin and Range ecological system. In addition, there is an internationally significant sculpture being completed within Garden Valley. The visual and sensory elements of the sculpture depend in large part on the pristine scenic quality of the land surrounding it. On completion, the sculpture is likely to attract many visitors annually to the area. The Visual Resource Management Class II for this special recreation management area would serve to preserve the existing character of the landscape.

Revised visual resource management inventory classes would be implemented for the entire planning area. Management classes would be based on the new inventory classes developed for the planning area.

Alternative C

Visual resources would be managed in accordance with the following visual resource management classes (see **Map 2.4-6**).

Class I: 1,072,585 acres

Class II: 2,358,882 acres

Class III: 4,867,538 acres

Class IV: 3,086,991 acres

The revised visual resource management inventory classes would be implemented for the entire planning area. Management classes would be based on the new inventory classes developed for the planning area.

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Alternative D

Visual resources would be managed in accordance with the following visual resource management classes (see Map 2.4-7).

Class I: 1,061,448 acres
Class II: 10,324,548 acres
Class III: 0 acres
Class IV: 0 acres

The entire planning area would be designated as Visual Resource Management Class I or II. Class I would be limited to those special designation areas under management common to all alternatives. The remainder of the planning area would be designated as Class II. Projects would be designed to minimize light pollution from artificial light.

Alternative E

Same as Alternative B.

2.5.11.1 Monitoring of Visual Resources

Monitoring would be ongoing for all projects (including, but not limited to projects associated with any developments, land alterations, vegetation manipulation, etc.) which could potentially affect visual resources. These projects would be monitored to ensure compliance with established visual resource management classes. Monitoring would include the use of the visual contrast rating system, described in BLM Manual 8400 (BLM 1984).

2.5.12 Lands and Realty

Introduction

The Federal Land Policy and Management Act requires that public land be retained in federal ownership unless disposal of a particular parcel would serve the national interest. Acquisition of land to consolidate ownership patterns would provide for more efficient land management and administration for both public and private landowners. Retention and acquisition of land containing significant resource values would provide for long-term protection and management of those values.

Rights-of-way and other land uses are recognized as major uses of the public lands and are authorized pursuant to sections 302 and 501 of the Federal Land Policy and Management Act. Section 503 of the Federal Land Policy and Management Act provides for the designation of rights-of-way corridors and encourages utilization of rights-of-way in-common to minimize environmental impacts and the proliferation of separate rights-of-way. Bureau policy is to encourage prospective applicants to locate their proposals within corridors. Designation of avoidance areas~~those areas~~ that would be avoided by new rights-of-way unless there are no other options~~would~~ provide early notice to potential applicants when they are planning

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rights-of-way or other land use projects. Only facilities and uses would be permitted in avoidance areas which are consistent with the special designation associated with that area. Designation of exclusion zones~~those areas where no new rights-of-way would be allowed~~would provide protection of lands and resources, which have values which are not compatible with rights-of-way or other land uses.

Due to the fragmented nature of public lands in some parts of the District, the need to acquire legal public and administrative access is required to ensure continued effective administration and public use of these lands. This need becomes more acute as public use of these lands increases and as landowners become more aware of the value of public and private land for recreation and other purposes. Land tenure adjustment actions (exchanges or fee purchases) can be a valuable tool for access acquisitions. However, without careful review, lands actions, particularly disposals, can result in lost access. Other tools also can be utilized, such as constructing new roads around lands where access is restricted when the cost associated with acquisition is excessive, or where such acquisition is not feasible.

Section 204 of the Federal Land Policy and Management Act gives the Secretary of the Interior the authority to make, modify, extend, or revoke withdrawals and mandates periodic review of existing withdrawals. Interior Departmental Policy (DM 603) further requires that:

1. All withdrawals shall be kept to a minimum, consistent with the demonstrated needs of the agency requesting the withdrawals.
2. Lands shall be available for other public uses to the fullest extent possible, consistent with the purposes of the withdrawal.
3. A current and continuing review of existing withdrawals shall be instituted.

Desired Range of Conditions

The Ely Field Office would be responsive to the public's needs for community development land, utility and other associated rights-of-way, communication sites, and other allowed uses of BLM-administered lands.

Section 102 of the Federal Land Policy Management Act requires that public land be retained in federal ownership unless disposal of a particular parcel would serve the national interest. Acquisition of land to consolidate ownership patterns would provide for more efficient land management and administration for both public and private landowners. Retention and acquisition of land containing important resource values would provide for long-term protection and management of those values. Standard requirements for lands and realty actions within the Ely District are presented in Appendix N.

Land tenure adjustments would generally occur under the authority of Federal Land Policy Management Act; however, under certain circumstances, other authorities may be applicable as well. Land would be disposed of through a variety of means including but not limited to sale, exchange, Recreation and Public Purposes Act patents, and airport conveyances. The disposition of Bankhead-ones lands would be accomplished by Federal Land Policy Management Act sale or exchange. In all land tenure adjustments,

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particularly sales, exchanges, and Recreation and Public Purposes Act disposals, access to public land would be retained as necessary, in the form of a reservation or easement.

Goal

Manage public lands in a manner that allows the retention of public land with high resource values and consolidates public land patterns to ensure effective administration and improve resource management. Make available for disposal public lands that promote community development. Meet public needs for use authorizations such as rights-of-way, permits, leases, and easements while avoiding or minimizing adverse impacts to other resource values. Utilize withdrawal actions with the least restrictive measures and minimum size necessary to accomplish the desired purpose.

2.5.12.1 Parameter – Retention

Management Common to All Alternatives

1. Lands or interest in lands would be retained in designated critical habitat for threatened and endangered species.
2. Lands within ACECs would be retained.
3. Lands which preserve public access to recreation opportunities would be retained.

Alternative A

Big game habitat, upland game habitat, and wild horse herd management areas would be retained. Lands would be retained to prevent adverse effects on threatened or endangered species or their habitat. Lands would be retained where necessary to prevent loss, occupancy, destruction, or degradation of wetlands or riparian areas that would lead to the modification, or loss of the natural and beneficial functions of floodplains.

Alternative B

The BLM would retain public land or interest in lands that contribute to the restoration and health of the land within the District. Restoration efforts would result in the identification of lands suitable to retain key/crucial wildlife habitat.

Alternative C

Same as Alternative B.

Alternative D

There would be no net loss of public lands in the planning area.

Alternative E

Same as Alternative B.

2.5.12.2 Parameter – Disposal (Sales, Exchanges, and Recreation and Public Purposes Act)

Management Common to All Alternatives

1. No disposal of lands would occur in ACECs.
2. Up to 90,000 acres of public land in Lincoln County would be available for potential disposal under the Lincoln County Conservation, Recreation, and Development Act of 2004.
3. The Lincoln County Conservation, Recreation, and Development Act of 2004, states that up to 15,000 acres of public land in Lincoln County that could be conveyed to Lincoln County for open space and parks.
4. The Lincoln County Conservation, Recreation, and Development Act of 2004, identifies 4,785 acres of public land in Lincoln County could be conveyed to the State of Nevada for state park expansion.
5. Under authority of the Federal Lands Policy Management Act, Section 203, sales of portions of the National Trails System including the corridors of both the Pony Express National Historic Trail and the California National Historic Trail within the planning area are precluded. This limitation is without regard for eligibility to the National Register of Historic Places and is instead tied to the congressionally-designated corridor.
6. Approximately 640 acres would be available for potential disposal at Toquop.
7. Legal descriptions for lands available for potential disposal may be found in Appendix O.
8. The U.S. mineral estate may be conveyed inside or outside the designated disposal areas to consolidate surface and sub-surface management ownership, if there is no known mineral value present, or if the reservation of mineral rights by the U.S. is interfering with or precluding appropriate non-mineral development that is considered more beneficial use of the land. Conveyance of mineral interest shall be made only to the owner of record of the surface, upon payment of administrative costs and the fair market value of the interests being conveyed.

Sales. Sales of public land can result from either a BLM initiative or in response to expressed public interest or need. Lands to be considered for sale, at a minimum, must meet the following criteria as outlined in Section 203 of Federal Land Policy Management Act:

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- Lands that are difficult to manage and are not suitable for management by another federal department or agency.
- Disposal would serve important public objectives including, but not limited to, community expansion, community open space plans that may be developed, or economic development which outweighs other public objectives or values and could not be achieved prudently or feasibly on land other than public lands.
- Wetlands would be retained in federal ownership per BLM policy unless federal, state, public, or private institutions and parties have demonstrated the ability to maintain, restore, and protect wetlands and riparian habitats on a continuous basis. Sales may be authorized when:
 1. The tract of wetlands is either so small or remote that it is uneconomical to manage.
 2. The tract of public wetlands is not suitable for management by another federal agency.
 3. The patent contains restrictions of uses as prohibited by identified federal, state, or local wetland regulations.
 4. The patent contains restrictions and conditions that ensure the patentee can maintain, restore, and protect the wetlands on a continuous basis.

The Federal Lands Transaction Facilitation Act of July 25, 2000, authorized the use of funds from the disposal of public lands identified in land use plans prior to the date of the act. Funds may be allocated for the purchase of in-holdings and administrative costs. Approximately 11,571 acres of public land are available for disposal under this act in the Ely District. The Desert Tortoise Amendment identifies an additional 1,274 acres for possible disposal that would be carried forward under this RMP.

The Lincoln County Conservation, Recreation, and Development Act of 2004 directed the BLM to dispose of not more than 90,000 acres of public land in Lincoln County identified for disposal by the BLM through the Ely Resource Management Plan or a subsequent amendment to the land use plan. The lands identified in the approved plan upon signature of the Record of Decision would be withdrawn from:

- All forms of entry and appropriation under the public land laws, including the mining laws;
- Location, entry, and patent under the mining laws; and
- Operation of the mineral leasing and geothermal leasing laws.

Once the lands are disposed of by a competitive sale or an election by the County to obtain land under the Recreation and Public Purposes Act, the withdrawal would no longer apply.

Exchanges. Land exchanges would be promoted that serve the national interest and are beneficial to BLM programs or that support the programs of other agencies, per Sections 102, 205, and 206 of Federal Land Policy Management Act. The BLM would attempt to transfer/trade both surface and minerals ownership.

2.5 Management Direction for Resource Programs

Proposals would not be considered where it is the intent to transfer acquired lands out of public ownership or control (except Bankhead ones Act lands).

Recreation and Public Purpose. The objective of the Recreation and Public Purpose Act is to meet the needs of state and local governmental agencies and other qualified organizations for public lands required for recreational and public purposes. Use of the Recreation and Public Purpose Act protects public values in the land through its reversionary provisions and helps qualified entities obtain the special pricing authorized under this act.

Public lands would be conveyed or leased only for an established or definitely proposed project for which there is a reasonable timetable of development and satisfactory development and management plans. No more land than is reasonably necessary for the proposed use would be conveyed.

Existing Recreation and Public Purpose Act patents and leases are shown in Chapter 3.0 on **Table 3.12-2**. Existing and new Recreation and Public Purpose Act Leases not located in disposal areas may be patented outside of designated disposal areas.

Alternative A

A total of 28,531 acres are identified to be available for potential disposal under this alternative: 3,428 acres in Lincoln County; 1,960 acres in Nye County; and 23,134 acres in White Pine County. Approximately 11,342 acres would be available under the Federal Lands Transaction Facilitation Act in White Pine (see **Maps 2.4-8, 2.4-9, and 2.4-10**). Known unauthorized use of public lands would be resolved.

The area inside the Haypress allotment would not be managed as a horse preserve and no disposal would occur.

See **Maps 2.4-8, 2.4-9, and 2.4-10**.

Criteria for Disposal Under Alternative A

- Disposal of additional lands would be allowed on a case-by-case basis under existing authorizations.
- Disposal of lands outside designated big game habitat, upland game habitat, and wild horse herd management areas would be allowed on a case-by-case basis.
- Lands that contain National Register eligible cultural resource sites would not be considered for disposal.
- Land for agricultural production would be disposed of only in those areas that have been determined to have development potential in the Caliente MFP (outlined in the BRI Systems, Inc. study).

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- New applications for Carey Act, Desert Land Entries, and Indian Allotments would be processed on a case-by-case basis.

Alternative B

Only lands in identified areas would be available for potential disposal. Designated critical habitat for threatened and endangered species and habitat for special status species would not be disposed of. Disposal of lands outside of identified areas to resolve unauthorized use of public lands would be considered only when there are no other practical means of resolution.

A total of 87,834 acres are identified to be available for potential disposal under this alternative: 64,156 acres in Lincoln County; 320 acres in Nye County; and 23,358 acres in White Pine County (see **Maps 2.4-11, 2.4-12, and 2.4-13**).

Federal Land Policy and Management Act of 1976, Sections 203 and 209, states that sales are the preferred method of disposal. Because of the benefits of the Federal Land Policy and Management Act of 1976 land sales, no new applications for Desert Land Entry, Carey Act, or Indian Allotments would be processed unless a need can be shown that prevails over the public benefit of the Federal Land Policy and Management Act.

The area inside the Haypress allotment would not be managed as a horse preserve and no disposal would occur. A 1,300-acre parcel in White Pine County would be disposed of by direct sale for a power plant. Forty acres located at T. 68, R. 57 E., Section 25, NEME14 would be sold by direct sale.

See **Maps 2.4-11, 2.4-12, and 2.4-13**.

Criteria for Disposal Under Alternative B

- Land disposal of parcels containing National Register eligible cultural resource sites would be allowed when mitigation and/or data recovery has occurred prior to patent.
- Existing Desert Land Entry, Carey Act, and Indian Allotment applications located in designated disposal areas would be carried forward for processing. If the application is cancelled, relinquished, or rejected, the lands could not be applied for again. Any applications for Desert Land Entries, Carey Act, or Indian Allotments located within designated disposal areas would be rejected if they are located in a closed water basin unless water rights are held.
- Land disposals would be allowed within herd management areas when they would not prohibit free roaming behavior within or between areas inside the herd management area or would not eliminate enough habitat that the herd management area could no longer support a healthy, viable herd.
- Disposals would not occur in areas with high recreation value, unless state and county entities could show an over-riding need or an approved recreation management plan.

- Disposal of areas designated as critical habitat for threatened and endangered species and habitat for special status species would not occur.

Alternative C

Land disposal would be balanced with restoration while emphasizing commercial and economic development. Areas identified for potential disposal that lie adjacent to communities would have less emphasis placed on landscape restoration and protection, and more emphasis placed on environmentally responsible community and economic development.

A total of 288,744 acres are identified to be available for potential disposal under this alternative: 200,243 acres in Lincoln County; 1,960 acres in Nye County; and 86,541 acres in White Pine County (see **Maps 2.4-14, 2.4-15, and 2.4-16**).

The amount of acreage identified in Lincoln County for this alternative is greater than what is currently allowed under the Lincoln County Conservation, Recreation, and Development Act.

Approximately 7,843 acres in the Haypress allotment would be disposed of as a horse preserve in partnership with the National Mustang Association.

See **Maps 2.4-14, 2.4-15, and 2.4-16**.

Criteria for Disposal Under Alternative C

- Disposal of lands that are difficult to manage and are not suitable for management by another federal department or agency would be allowed.
- Land disposals would be allowed within herd management areas when the disposal would not prohibit free roaming behavior within or between areas inside the herd management area or eliminate enough habitat that the herd management area can no longer support a healthy viable herd.
- Lands would be disposed of when disposal would serve important public objectives, including but not limited to: a) community expansion or economic development; b) disposal could not be achieved prudently feasibly on land other than public lands; and c) disposal outweighs other public objectives or values.
- Disposal of lands within critical habitat that would further endanger a species (plant or animal) would not be allowed.
- Land disposal of parcels containing National Register eligible cultural resource sites would be allowed when mitigation and/or data recovery has occurred prior to patent.

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- New applications for Carey Act, Desert Land Entries, and Indian Allotments only would be accepted in areas designated for disposal.

Alternative D

A total of 12,790 acres are identified to be available for potential disposal under this alternative: 1,448 acres in Lincoln County; no acreage in Nye County; and 11,342 acres in White Pine County. Approximately 11,342 acres would be available under the Federal Lands Transaction Facilitation Act in White Pine.

No net loss of public land would be required under this alternative. Disposals may not be completed unless the same amount of acreage is acquired. No withdrawals would be implemented on subsequent specific disposal actions. Unauthorized use of public lands would be resolved.

The area inside the Haypress allotment would not be managed as a horse preserve and no disposal would occur.

See Maps 2.4-17, 2.4-18, and 2.4-19.

Criteria for Disposal Under Alternative D

- Disposals may be done when adjacent to communities or private property
- Disposals may be done when capital investments have been made on public land and the BLM would benefit by allowing the developments and capital improvements be changed to private ownership,
- Disposals may be done to facilitate implementation of resource goals and objectives as outlined in the RMP.
- Disposals would not be done in ACECs, Special Management Areas, critical habitat, land containing NRHP sites, and/or closed water basins.
- New applications for Care Act, Desert Land Entries, and Indian Allotments would be processed on a case-by-case basis.

Alternative E

A total of 95,677 acres are identified to be available for potential disposal under this alternative: 71,999 acres in Lincoln County; 320 acres in Nye County; and 23,358 acres in White Pine County.

Approximately 7,843 acres in the Haypress allotment would be disposed of as a horse preserve in partnership with the National Mustang Association. A 1,300 acre parcel in White Pine County would be disposed of by direct sale for a power plant. Forty acres located at Township 68, Range 57 East, Section 25, NEME would be sold by direct sale.

See Maps 2.4-12, 2.4-20, and 2.4-21.

Criteria for Disposal Under Alternative E

- Land disposal of parcels containing National Register eligible sites would be allowed when mitigation and/or data recovery has occurred prior to patent.
- Disposals would not occur in areas with high recreation value, unless state and county entities could show an over-riding need or an approved recreation management plan.
- Disposal of lands that are difficult to manage and are not suitable for management by another federal department or agency would be allowed.
- Disposal of lands would be allowed when disposal would serve important public objectives, including but not limited to community expansion or economic development; disposal could not be achieved prudently or feasibly on land other than public lands; and disposal outweighs other public objectives or values.
- Existing Desert Land Entry, Carey Act, and Indian Allotment applications located in designated disposal areas would be carried forward for processing. If the application is cancelled, relinquished, or rejected, the lands could not be applied for again. Any applications for Desert Land Entries, Carey Act, or Indian Allotments located within designated disposal areas would be rejected if they are located in a closed water basin unless existing water rights are held.
- Land disposals would be allowed within herd management areas when the disposal would not prohibit free roaming behavior within or between areas inside the herd management area or eliminate enough habitat that the herd management area can no longer support a healthy viable herd.
- Disposal of areas designated as critical habitat for threatened and endangered species would not occur.

2.5.12.3 Parameter – Acquisitions

Management Common to All Alternatives

1. Acquisition of lands would be limited to situations where no other practical alternative exists. Coordination on any acquisition would be done with federal, state, county, and other interested parties prior the acquisition.
2. Lands or interest in lands with at-risk or high resource values or those characteristics that contribute to restoration, healthy watersheds, or other resource goals in the District, or also provide for environmentally responsible commercial activities, would be considered for acquisition.

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3. Acquisitions may involve lands with sensitive or high resource values, including special management areas, such as ACECs, Wilderness Study Areas, and designated wilderness.
4. Newly acquired lands would be managed for the highest potential purpose for which they are acquired. Acquired lands within ACECs or other special management areas that have unique or fragile resources would be managed in the same manner as the surrounding special management areas.
5. Lands acquired outside of special management areas would be managed in the same manner as comparable surrounding public lands.
6. Legal public or administrative access would be acquired from willing landowners, where a public demand or administrative need exists.
7. Split-estate would be consolidated where appropriate to improve resource management while protecting resource values.
8. Purchased lands would not be considered for sale, exchange, Recreation and Public Purposes conveyance, Desert Land Entry, Carey Act, Indian Allotment, or any other title transfer authority.

Alternative A

Land would be considered for acquisition on a case-by-case basis. Local governments and private individuals would be encouraged to acquire options on or enter non-binding agreements to purchase environmentally sensitive private lands or rights to private lands within ACECs, designated wilderness, or Wilderness Study Areas that could be exchanged for public lands outside these areas. BLM would acquire lands legislatively transferred to Harrich Investments, LLC, (formerly Aerojet) by Public Law 100-275 through the appropriate authorities, should those lands become available, including any lands acquired in the Kane Springs ACEC. Additions to the Kane Springs ACEC also would occur if termination or relinquishment of the lease were to take place. Private lands or rights to private lands would be acquired within ACECs would be considered for acquisition from willing sellers.

Alternative B

Same as Alternative A.

Alternative C

Same as Alternative A.

Alternative D

Legislative disposals would be implemented as mandated, but administrative disposals would not occur until sufficient "replacement lands" could be acquired to achieve no net loss of public land.

Alternative E

Same as Alternative A.

2.5.12.4 Parameter - Withdrawals

Management Common to All Alternatives

1. Pending withdrawals consist of the U.S. Fish and Wildlife Service expansion of the Ruby Marshes National Wildlife Refuge and the Ash Springs Recreation Area.
2. Proposed withdrawals consist of: the BLM Caliente Administrative Site; the municipal water supply for the City of Ely, Murry Springs Watershed; and the entrance area from Baker to Great Basin National Park (see Chapter 3.0, **Table 3.12-4**, Pending/Proposed Withdrawals).
3. The Lincoln County Conservation, Recreation, and Development Act withdraws up to 90,000 acres for potential disposal from all forms of entry and patent under the mining laws and the operation of the mineral leasing and geothermal laws.

Alternative A

Requests for new withdrawals, withdrawal relinquishments, or modifications would be considered on a case-by-case basis. Approximately 14,770 acres of lands identified for potential disposal would be withdrawn from mineral entry.

Alternative B

All Entry. Lands with sensitive or high resource values would be withdrawn from surface and mineral entry.

Mineral Entry Only. 64,156 acres of land identified for disposal would be withdrawn from mineral entry.

Alternative C

Mineral Entry Only. The BLM would withdraw from mineral entry, 200,243 acres of land identified for potential disposal.

Alternative D

The BLM would withdraw from mineral entry, 12,790 acres of land identified for potential disposal.

Requests by other federal agencies for new withdrawals, withdrawal relinquishments, or modifications would be considered on a case-by-case basis.

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Alternative E

Proposed withdrawals would be the same as Alternative B except that requests by other federal agencies for new withdrawals, withdrawal relinquishments, and modifications would be considered on a case-by-case basis. The BLM would withdraw from mineral entry, 71,999 acres of land identified for potential disposal.

2.5.12.5 Parameter – Corridors

Management Common to All Alternatives

1. The Moapa Corridor would be maintained at 0.5 mile wide.
2. A corridor 1,000 feet wide and 500 feet on centerline of the existing telephone fiber-optic lines, beginning Township 11 South, Range 71 East, Section 30, running easterly to the Arizona state line would be designated.
3. A corridor 2,640 feet wide extending northerly from the north end of the Aerojet designated corridor following the centerline of the approved Southwest Intertie Power Project right-of-way alignment would be maintained.
4. Congressionally mandated corridors of the location and width provided by Congress would be maintained.
5. Two new corridors would be designated by the Lincoln County Conservation, Recreation, and Development Act.

Corridors include both utility and transportation uses. Section 503 of the Federal Land Policy Management Act provides for the designation of rights-of-way corridors and encourages the utilization of rights-of-way in common to minimize environmental impacts and the proliferation of separate rights-of-way. It is BLM policy to encourage prospective applicants to locate their proposals within corridors.

Alternative A

No new utility corridors would be designated. All rights-of-way would be encouraged to locate within existing designated corridors.

Existing designated utility corridors would be retained as follows (Map 3.12-2):

- Southwest Intertie Project corridor at 0.5 mile wide.
- Ely to Delta corridor at 0.5 mile wide.

2.5 Management Direction for Resource Programs

- Two rights-of-way designated by the Lincoln County Conservation, Recreation, and Development Act of 2004 at a width of 0.5 mile.
- Falcon to Gonder corridor at no specified width.
- Sierra Pacific right-of-way at 160 feet wide within the Falcon to Gonder corridor.

Alternative B

Designated corridors would be 0.5 mile in width. All linear rights-of-way for electrical transmission lines greater than 69 kilovolts, all mainline fiber optics facilities, and all pipelines greater than 10 inches in diameter would be located within designated corridors.

Existing corridors would be managed subject to restoration efforts. If a proposed new corridor bisects or traverses through a watershed that has not been analyzed, environmental documentation for the proposed new corridor would include restoration efforts.

A new corridor would be designated connecting with the corridor designated by the Lincoln County Conservation, Recreation, and Development Act. The corridor would begin near the Atlanta mine where the Lincoln County Conservation, Recreation, and Development Act corridor ends, and would trend in a northerly direction along the east side of Spring Valley, ending at the White Pine/Elko County Line, approximately 10 miles east of Lages Junction on Highway 93A.

Alternative C

Designated corridors would be 3 miles in width. Rights-of-way for electrical transmission lines greater than 69 kilovolts, all mainline fiber optics facilities, and all pipelines greater than 10 inches in diameter would be encouraged to be located within designated corridors.

A new corridor would be designated connecting with the corridor designated by the Lincoln County Conservation, Recreation, and Development Act. The corridor would begin near the Atlanta mine where the Lincoln County Conservation, Recreation, and Development Act corridor ends, and would trend in a northerly direction along the west side of Spring Valley, ending at the White Pine/Elko County Line, northeast of Lages Junction on Highway 93A.

Alternative D

No additional corridors would be designated. All rights-of-way would be located within designated corridors.

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Alternative E

Designated corridors would be 0.5 mile in width. Rights-of-way for electrical transmission lines greater than 69 kilovolts, all mainline fiber optics facilities, and all pipelines greater than 10 inches in diameter would be encouraged to be located within designated corridors.

A new corridor would be designated connecting with the corridor designated by the Lincoln County Conservation, Recreation, and Development Act. The corridor would begin near the Atlanta mine where the Lincoln County Conservation, Recreation, and Development Act corridor ends, and would trend in a northerly direction along the east side of Spring Valley, ending at the White Pine/Elko County Line, approximately 10 miles east of Lages Junction on Highway 93A.

2.5.12.6 Parameter – Communication Sites

Management Common to All Alternatives

1. Co-location of all communication sites would be emphasized.
2. Wilderness Study Areas would constitute avoidance areas.
3. Designated wilderness would constitute exclusion areas.
4. ACECs would be avoidance or exclusion areas (see Section 2.5.22).
5. Coordination with the Department of Defense on communication towers over 100 feet tall would be encouraged.

Alternative A

New communication sites would be authorized on a case-by-case basis.

Alternative B

New communication sites would be authorized after existing sites have reached maximum capacity.

Alternative C

Communication site locations that support community and economic development would be authorized.

Alternative D

The suitability of all existing/pending communication sites would be analyzed. Specific limited communication site areas would be established based on minimal impacts to public lands.

Alternative E

Communication site locations that support community and economic development with an emphasis on co-location of sites would be authorized.

2.5.12.7 Parameter – Land Use Authorizations (Rights-of-Way, Permits, Leases, and Easements)

Management Common to All Alternatives

1. Designated wilderness would be exclusion areas.
2. Coordination with the Department of Defense for rights-of-way equipment over 100 feet tall would be encouraged.

Rights-of-way and other land uses are recognized as major uses of the public lands and are authorized pursuant to Sections 302, 501, and 503 of the Federal Land Policy and Management Act, the Federal Public Airport Act of 1928 (airport leases), and the Recreation and Public Purposes Act (recreation leases).

Section 503 of the Federal Land Policy and Management Act provides for the designation of right-of-way corridors and encourages utilization of rights-of-way in-common to minimize environmental impacts and the proliferation of separate rights-of-way.

Alternative A

Land use authorizations would be issued on a case-by-case basis.

Areas outside of proposed corridors within existing ACECs for the protection of desert tortoise would be right-of-way avoidance areas.

Designated wilderness would be considered right-of-way exclusion areas and all requests for new material rights-of-way pursuant to the Federal Aid Highway Act within designated wilderness would be considered inconsistent with the existing management plan and amendments.

Alternative B

Where feasible, new land use authorizations would be consolidated within or located adjacent to existing authorizations.

Land use authorizations would be balanced with commodity development and landscape restoration. ACECs would be avoidance or exclusion areas (see Section 2.5.22). Actions may be limited, centralized, or prohibited based on restoration efforts and other resource objectives.

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Alternative C

Land use authorizations would be processed to facilitate community and economic development. ACECs would be avoidance or exclusion areas (see Section 2.5.22).

Alternative D

There would be no new land use authorizations. No land use authorization avoidance or exclusion areas would be necessary.

Alternative E

Land use authorizations would be issued on a case-by-case basis. ACECs would be avoidance or exclusion areas (see Section 2.5.22).

2.5.12.8 Monitoring of Lands and Realty

Progress on land tenure adjustment actions would be monitored through the BLM accomplishment tracking process. Periodic planning updates would be published, identifying acres transferred within the various land tenure zones.

Rights-of-way and other land use authorizations would be monitored as proposals are evaluated through the NEPA process. Individual projects would be monitored to ensure compliance with the terms and conditions of the authorizing document and through the BLM accomplishment tracking process. Periodic planning updates would be published identifying land use authorizations issued.

Public access needs would be reviewed periodically. Access acquisition would be monitored through the BLM accomplishment tracking process. Periodic planning updates would be published identifying access acquired.

Withdrawal actions would be monitored through the BLM accomplishment tracking process. Periodic planning updates would be published identifying areas withdrawn.

2.5.13 Renewable Energy

Introduction

BLM Instruction Memorandum No. 2005-006 establishes policy for the processing of right-of-way applications for potential solar energy development projects on public lands administered by the BLM, and evaluating the feasibility of installing solar energy systems on BLM administrative facilities and projects.

BLM Instruction Memoranda No. 2002-196 and No. 2003-020 provide interim guidance on the processing of right-of-way applications for wind energy testing and monitoring facilities, as well as applications for potential

wind energy development projects on public lands administered by the BLM, and evaluating the feasibility of installing wind energy systems on public lands administered by the BLM.

Desired Range of Conditions

The Ely Field Office would be responsive to applications for renewable energy sites and associated rights-of-way, as encouraged by current BLM policy.

Goal

Provide opportunities for development of renewable energy sources such as wind, solar, biomass, and other alternative energy sources while minimizing adverse impacts to other resources such as wildlife and visual resources.

2.5.13.1 Parameter – Wind and Solar Energy

Management Common to All Alternatives

1. Applications for renewable energy development would be reviewed and approved on a location-by-location basis.
2. Wind energy development would conform to the best management practices presented in Appendix B.
3. Coordination with the Department of Defense on wind generation facilities would be encouraged.

Equal emphasis would be placed on all renewable energy resources. Renewable energy would be balanced with restoration while emphasizing commercial and economic development. Biomass, solar, wind, and geothermal energy projects would have less emphasis placed on landscape restoration and protection, and more emphasis placed on environmentally responsible community and economic development. Areas of potential renewable development have been identified based on the locations most feasible for development. However, applications for development would not necessarily be limited to these areas.

Alternative A

No areas would be designated as potential wind energy development areas or potential solar energy development areas. Applications for renewable energy development would be reviewed and approved on a location-by-location basis.

Alternative B

Approximately 201,400 acres would be designated as potential wind energy development areas (see **Map 2.4-24**). Approximately 6,767,800 acres would be designated as potential solar energy development areas (see **Map 2.4-26**). Although these areas were identified as high potential, this does not mean that they

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would all have renewable energy developed on them. Renewable energy projects would be subject to NEPA as well as the land use plan. Differences in acreages are a result of differences in configurations of ACECs on Visual Resource Management Class 1 areas causing these lands to be removed from potential renewable energy development.

Alternative C

Approximately 202,600 acres would be designated as potential wind energy development areas (see **Map 2.4-25**). Approximately 6,766,900 acres would be designated as potential solar energy development areas (see **Map 2.4-27**). Although these areas were identified as high potential, this does not mean that they would all have renewable energy developed on them. Renewable energy projects would be subject to NEPA as well as the land use plan. Differences in acreages are a result of differences in configurations of ACECs on Visual Resource Management Class 1 areas causing these lands to be removed from potential renewable energy development.

Alternative D

Same as Alternative A.

Alternative E

Approximately 202,600 acres would be designated as potential wind energy development areas (see **Map 2.4-25**). Approximately 6,769,600 acres would be designated as potential solar energy development areas (see **Map 2.4-28**). Although these areas were identified as high potential, this does not mean that they would all have renewable energy developed on them. Renewable energy projects would be subject to another level of NEPA beyond that provided for the RMP. Differences in acreages are a result of differences in configurations of ACECs on Visual Resource Management Class 1 areas causing these lands to be removed from potential renewable energy development.

2.5.13.2 Monitoring of Renewable Energy

Actions would be monitored through the BLM accomplishment tracking process. Periodic planning updates would be published identifying rights-of-way issued.

2.5.14 Travel Management and Off-highway Vehicle Use

Introduction

Providing and maintaining access to the public lands is an important public service provided by BLM. The *National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands* (BLM 2001a) provides guidance, used herein, in developing and implementing solutions to off-highway vehicle issues. Access is necessary for BLM personnel to administer the various resource management programs on public land including livestock grazing, mining, wildlife habitat management, watershed management, recreation management, and numerous other programs. Access also is an important factor in fire suppression and fire

2.5 Management Direction for Resource Programs

management. Roads on BLM-administered lands are used by permitted users such as miners and livestock operators. Roads also are heavily used by recreationists for dispersed recreation activities such as hunting, fishing, camping, rock-hounding, off-highway vehicle driving, and sightseeing.

Federal regulations (43 Code of Federal Regulations Part 8340) and BLM planning guidance require the BLM to designate all BLM-administered land as either open, limited, or closed in regard to off-road vehicle (now termed off-highway vehicle) use. These designations are designed to help meet public demand for off-highway vehicle activities, protect natural resources, ensure public safety, and minimize conflicts among users.

Desired Range of Conditions

Motorized vehicle traffic would be limited to designated roads and trails that can sustain this type of use while protecting sensitive resources and providing access for legitimate administrative and public uses.

Goal

Provide and maintain suitable access to public lands. Manage off-highway vehicle use to protect resource values, promote public safety, provide off-highway vehicle opportunities where appropriate, and minimize conflict.

2.5.14.1 Parameter – Transportation Plan

Management Common to All Alternatives

1. Motorized vehicle traffic would be limited to designated routes within desert tortoise habitat according to the Desert Tortoise Amendment.
2. Development of site-specific transportation plans would include public collaboration.
3. Motorized vehicle traffic would be closed in designated wilderness according to policy and enabling legislation.

Alternative A

Outside desert tortoise habitat, road and trail designation would be on a case-by-case basis. Resource impacts resulting from motorized vehicle travel would be handled through emergency closures.

Alternative B

All motorized vehicle traffic would be limited to designated roads and trails except when needed for safety, required for government (federal, state, and local) administrative needs, as authorized on a permit, or otherwise officially approved. All Wilderness Study Areas would be closed to motorized travel.

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The Ely Field Office Transportation Plan would be updated through subsequent implementation-level plans. Road and trail data would be collected at the watershed level as part of the watershed analysis. As road and trail data collection is completed, a review team would be established to analyze each route and make recommendations for designations within the specific watershed based on the following criteria. (Other criteria would be added as new issues develop in different watersheds over time.)

- Route redundancy
- Wildlife habitat needs
- Visual resource management class objectives
- Recreation opportunities
- Administrative needs
- Maintaining public access
- Special management areas
- Cultural resources
- Riparian and wetland resources

The review team would recommend one of the following designations for each route based on their evaluation.

- Open for all uses
- Open with route improvements
- Limited for specific administrative needs
- Limited following seasonal restrictions
- Limited to non-motorized use
- Closed

Greater emphasis on ecological system restoration would be placed on road and trail designations. Watersheds would be prioritized for road and trail designations based on ecological system restoration needs.

The temporary emergency off-road vehicle limitations for the Duck Creek Basin (see **Map 2.5-1**) would be made permanent and incorporated into the transportation plan. Additional updates to the transportation plan would be made through the watershed analysis process.

Roads, routes, and trails identified as closed through a collaborative public process would be rehabilitated in their entirety to discourage continued motorized use.

Alternative C

The Ely Field Office Transportation Plan would be updated through subsequent implementation-level plans. Road and trail data would be collected at the watershed level as part of the watershed analysis. As road and

2.5 Management Direction for Resource Programs

trail data collection is completed, a review team would be established to analyze each route and make recommendations for designations within the specific watershed based on the criteria listed in Alternative B.

Road and trail designations would emphasize designations for specific administrative needs, recreation opportunities, and tourism. (Other criteria would be added as new issues develop in different watersheds over time.)

The review team would recommend one of the designations listed in Alternative B for each route based on their evaluation.

Greater emphasis on ecological system restoration would be placed on road and trail designations. Watersheds would be prioritized for road and trail designation based on ecological system restoration needs.

The temporary emergency off-road vehicle limitations for the Duck Creek Basin (see **Map 2.5-1**) would be made permanent and incorporated into the transportation plan. Additional updates to the transportation plan would be made through the watershed analysis process.

Roads, routes, and trails identified as closed through a collaborative public process would be rehabilitated in their entirety to discourage continued motorized use.

Alternative D

All motorized vehicle travel would be limited to designated roads and trails. Road and trail designations would be limited to mechanically maintained roads. The transportation plan would consist of currently mechanically maintained roads and trails. Unmaintained roads would be rehabilitated to discourage continued motorized use.

Alternative E

The Ely Field Office Transportation Plan would be updated through subsequent implementation-level plans. Road and trail data would be collected at the watershed level as part of the watershed analysis. As road and trail data collection is completed, a review team would be established to analyze each route and make recommendations for designations within the specific watershed based on the criteria listed in Alternative B.

Road and trail designations would emphasize designations for specific administrative needs, recreation opportunities, and tourism. (Other criteria would be added as new issues develop in different watersheds over time.)

All motorized vehicle traffic would be limited to designated roads and trails except when needed for safety, required for government (federal, state, and local) administrative needs, as authorized on a permit, to retrieve downed big game, or otherwise officially approved. All Wilderness Study Areas would be closed to motorized travel.

2.0 ALTERNATIVES

The temporary emergency off-road vehicle limitations for the Duck Creek Basin would be made permanent and incorporated into the transportation plan (see **Map 2.5-1**). Additional updates to the transportation plan would be made as described in Alternative B. Designated wilderness would be closed to motorized and mechanized travel in accordance with enabling legislation.

Roads that have been identified through a collaborative public process as closed to motorized traffic to discourage continued motorized use would be rehabilitated on a case-by-case basis.

2.5.14.2 Parameter – Off-highway Vehicles

Management Common to All Alternatives

All designated wilderness would be closed to motorized and mechanized travel in accordance with enabling legislation.

Alternative A

Off-highway vehicles would be managed in accordance with the following designations (see **Map 2.4-29**).

- Open to cross-country off-highway vehicle use: 9,836,000 acres.
- Off-highway vehicle use limited to designated roads and trails: 804,000 acres. This acreage reflects wilderness study areas and the Desert Tortoise Amendment Area.
- Closed to off-highway vehicle use: 760,000 acres. This acreage reflects designated wilderness.

Designated wilderness would be closed to vehicle use in accordance with enabling legislation. Within all Wilderness Study Areas in the planning area, vehicle use would be limited to designated roads and trails. Within the Desert Tortoise Amendment area, all vehicle use would be limited to designated roads and trails. The remainder of the planning area would be designated as open. Cross-country travel would be allowed in areas designated as open.

Alternative B

Off-highway vehicles would be managed in accordance with the following designations (see **Map 2.4-30**).

- Open to cross-country off-highway vehicle use: 0 acres.
- Off-highway vehicle use limited to designated roads and trails: 10,338,000 acres.
- Closed to off-highway vehicle use: 1,062,000 acres. This acreage reflects designated wilderness and Wilderness Study Areas.

Alternative C

Off-highway vehicles would be managed in accordance with the following designations (see Map 2.4-31):

- Open to cross-country off-highway vehicle use: 32,000 acres in dry lake beds.
- Off-highway vehicle use limited to designated roads and trails: 10,608,000 acres.
- Closed to off-highway vehicle use: 760,000 acres. This acreage reflects designated wilderness.

Alternative D

Off-highway vehicles would be limited to maintained roads and trails (see Map 2.4-32 for District transportation map).

- Open to cross-country off-highway vehicle use: 0 acres.
- Off-highway vehicle use limited to maintained roads and trails: approximately 400,000 acres.
- Closed to off-highway vehicle use: 11,000,000 acres.

Alternative E

Same as Alternative B.

2.5.14.3 Monitoring of Travel Management and Off-highway Vehicle Use

Roads would be monitored, usually on an annual basis in coordination with other resource programs, to determine maintenance needs. Monitoring of any closed roads would be done in conjunction with monitoring other resource uses such as watershed condition or off-highway vehicle use. The purpose of this monitoring would be to ensure that closed roads are not being used and that resource damage such as erosion is not occurring.

Monitoring off-highway vehicle uses within the planning area would focus on compliance with specific designations, as well as, determining whether these uses are causing adverse effects on various resources (i.e., soils, water, air, vegetation, fish and wildlife, etc.). Methods of monitoring may include visitor contacts, permit review, visual surveillance, traffic counters, periodic patrols to check boundaries, signing, and visitor use, limits of acceptable change, and/or aerial reconnaissance. Closures would be monitored to ensure public safety and protect affected roadbeds or areas. Baseline data would be established for sites where off-highway vehicle use is occurring, and sites would be rehabilitated or closed as necessary.

2.5.15 Recreation

Introduction

The Federal Land Policy and Management Act provides for recreation use of public land as an integral part of multiple use management. Dispersed, unstructured activities typify the recreational uses occurring

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throughout the majority of the planning area. Policy guidelines in BLM Manual 8300 direct the BLM to designate special units known as special recreation management areas. Management within these special recreation management areas focuses on providing recreation opportunities that would not otherwise be available to the public, reducing conflicts among users, minimizing damage to resources, and reducing visitor health and safety problems. Major investments in recreation facilities and visitor assistance are appropriate in special recreation management areas when required to meet management objectives. Public lands not designated as special recreation management areas, or other special designations, are managed as extensive recreation management areas. Management direction within extensive recreation management areas focuses on actions to facilitate recreation opportunities by providing basic information and access. Visitors in extensive recreation management areas are expected to rely heavily on their own equipment, knowledge, and skills while participating in recreation activities. In accordance with the Federal Land Policy and Management Act, the BLM sets recreation policy on the national level. The policy emphasizes resource-dependent recreation opportunities that typify the vast western landscapes; striving to meet the social and economic needs of present and future generations, providing for the health and safety of the visitor, and accomplishing these goals within the constraints of achieving and maintaining healthy ecosystems.

Desired Range of Conditions

The Ely Field Office would provide a wide variety of recreation opportunities for a growing demand by a public seeking the open, undeveloped spaces that are characteristic of the District.

Goal

Provide quality settings for developed and undeveloped recreation experiences and opportunities while protecting resources.

2.5.15.1 Parameter – Special Recreation Management Areas

Management Common to All Alternatives

Areas not designated as special recreation management areas would be managed as extensive recreation management areas.

Alternative A

An estimated 750,000 acres would continue to be managed as one special recreation management area. Emphasis for the special recreation management area would be on maintaining existing developed facilities.

Only the Loneliest Highway Special Recreation Management Area would exist (see **Table 2.5-11**). The Loneliest Highway Special Recreation Management Area is located within White Pine County and is comprised of four separate areas: Illipah Reservoir, Cold Creek Reservoir, Garnet Fields Rockhound Area, and the Pony Express Trail. All remaining public land would be managed as an extensive recreation management area. Existing recreation sites would remain open and would be maintained at current levels.

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Closure of sites would remain an option in the case of public safety or resource condition issues. Dispersed use management would remain reactive rather than proactive. The BLM would continue to work as a member of the diversified interagency recreation team to promote recreational opportunities in the planning area. Tourism and recreation opportunities would not be emphasized.

Table 2.5-11
Special Recreation Management Areas by Alternative

A	Alternatives				Acres	Primary Values
	B (see Map 2.4-31)	C (see Map 2.4-33)	D	E (see Map 2.4-31)		
--	Chief Mountain	Chief Mountain	--	Chief Mountain	550,000	Motorized recreation
--	Egan Crest	Egan Crest	--	Egan Crest	52,000	Motorized Recreation
--	Pahranagat	Pahranagat	--	Pahranagat	364,000	Heritage tourism
--	North Delamar	North Delamar	--	North Delamar	235,000	Non-motorized Recreation, Equestrian, Hiking, and Mountain Biking
--	Telegraph	Telegraph	--	Telegraph	255,000	Non-motorized Recreation, Equestrian, Hiking, and Mountain Biking
--	Snake Range	Snake Range	--	Snake Range	99,000	Non-motorized Recreation, Equestrian, Hiking, and Mountain Biking
--	Mount Grafton	Mount Grafton	--	Mount Grafton	506,000	Hunting opportunities
--	Area 51 off-highway vehicle	Area 51 off-highway vehicle	--	Area 51 off-highway vehicle	242,000 Alternatives B and E 349,000 Alternative C	Motorized recreation
Loneliest Highway	--	Loneliest Highway	Loneliest Highway	--	Approximately 750,000	Rural motorized and non-motorized opportunities
--	--	Pancake Range	--	--	153,000	Motorized Recreation
	Garden Valley			Garden Valley	374,000	Scenic values

Alternative B

Nine new special recreation management areas totaling 2,680,000 acres would be designated (see Map 2.4-33). A total of three areas within the Area 51, Chief Mountain, and Egan Crest special recreation management areas would emphasize motorized recreation (off-highway vehicle emphasis areas). These areas total 110,000 acres (see Map 2.4-34). The Loneliest Highway Special Recreation Management Area would be dropped. Within newly designated management areas, existing recreation sites would be improved, adapted, and expanded to meet growing demands for recreation opportunities. A broad recreation opportunity spectrum would be emphasized, ensuring a balance of recreation experiences. Additional recreation sites would be developed, as appropriate, to proactively manage for tourism and

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recreation experiences. The BLM would pursue partnerships with appropriate entities to promote and enhance recreation opportunities in the planning area.

Alternative C

Nine new special recreation management areas (**Table 2.5-11** and **Map 2.4-35**) would be designated, and the Loneliest Highway Special Recreation Management Area would be retained, for a total of 3,310,000 acres. The Loneliest Highway Special Recreation Management Area is not shown on this map due to the scattered nature of its recreation sites. A total of five areas, within the Chief Mountain, Egan Crest, Pancake Summit, and Area 51 special recreation management areas, would emphasize motorized recreation (off-highway vehicle emphasis areas). These areas total 734,000 acres (see **Map 2.4-36**).

Additional emphasis would be placed on increasing tourism opportunities and partnerships with the gateway communities in White Pine and Lincoln counties. A more developed recreation experience would be emphasized.

Alternative D

No special recreation management areas would be managed and existing developed sites would be eliminated.

Alternative E

Nine new special recreation management areas totaling 2,680,000 acres would be designated (see **Map 2.4-33**). The Loneliest Highway Special Recreation Management Area would be dropped. A total of five areas, within the Chief Mountain, Egan Crest, Pancake Summit, and Area 51 special recreation management areas, would emphasize motorized recreation (off-highway vehicle emphasis areas). These areas total 734,000 acres (see **Map 2.4-36**). A broad recreation opportunity spectrum would be emphasized, ensuring a balance of recreation experiences. Additional recreation sites would be developed, as appropriate, to proactively manage for tourism and recreation experiences. The BLM would pursue partnerships with appropriate entities to promote and enhance recreation opportunities in the planning area.

2.5.15.2 Parameter – Special Recreation Permits

Management Common to All Alternatives

1. Development or construction of recreation trails and routes are acknowledged as a future need and would be considered in site-specific planning.
2. Outfitter and guide permits would not be limited until resource conditions warranted setting limitations.
3. Appropriate protection of cave resources in the planning area would be established.

2.5 Management Direction for Resource Programs

4. A comprehensive climbing management plan to promote responsible and ethical climbing practices would be developed. The Ely Field Office staff would work with appropriate entities to protect all resources and preserve access for climbing and bouldering opportunities.
5. Specific recreation activities would be managed in accordance with the goals and emphasis for recreation management areas.
6. Most of the planning area would be managed for dispersed, backcountry, unregulated, and undeveloped use.

Alternative A

No limitations would be placed on outfitter and guide permits for hunting. No areas would be identified for off-highway vehicle emphasis areas. Motorcycle events would be limited to twelve races on routes subject to NEPA analysis. A maximum of two truck events would be permitted each year on race routes subject to NEPA analysis.

Alternative B

Outfitter and guide permits for hunting would be issued through a competitive bid process with no limits on the number of permits offered. A total of 310,100 acres would be identified for off-highway vehicle emphasis areas. Two special recreation permit areas totaling approximately 656,000 acres would be established to maximize opportunities for motorcycle special recreation permit events (see **Map 2.4-37**). A maximum of two truck events would be permitted each year on race routes subject to NEPA analysis.

Alternative C

No limitations would be placed on outfitter and guide permits for hunting. Four special recreation permit areas totaling approximately 1.36 million acres would be established to maximize opportunities for motorcycle special recreation permit events (see **Map 2.4-38**). A maximum of eight truck events would be permitted each year. Twelve routes would be established for all truck events.

Alternative D

No outfitter and guide permits for hunting would be issued. No areas would be identified for off-highway vehicle emphasis areas. No motorcycle events would be permitted. No truck events would be permitted.

Alternative E

For the first 3 years following plan implementation, outfitter and guide permits for hunting would be limited to parties who have had a permit for the past 3 years. Monitoring of use would occur for 3 years and numbers of permits for geographic areas (to be defined based on the results of monitoring and on other designations such as special recreation management areas) would be established. Following the initial monitoring period,

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permits would be issued by geographical area through an open, competitive bid process. Permits would limit the number of sub-guides that could operate. Four special recreation permit areas totaling approximately 1.36 million acres would be established to maximize opportunities for motorcycle special recreation permit events (see **Map 2.4-38**). A maximum of two truck events would be permitted each year. Four routes would be established for all truck events.

2.5.15.3 Monitoring of Recreation

Monitoring would occur on an ongoing or annual basis. Monitoring would include periodic patrols to check boundaries, signing, and visitor use; to ensure visitor compliance with rules and regulations; to establish baseline data and observation points to determine current impacts from recreation use; and development of studies to help determine appropriate levels and patterns of recreational use and the influences of other resource uses. Monitoring would focus on visitation levels, compliance with rules, regulations, and permit stipulations for specific sites (developed sites), dispersed uses, and prescribed standards and guidelines as set in the respective recreation opportunity spectrum classes. Methods of monitoring may include the use of traffic counters, surveillance at developed recreation sites, limits of acceptable change studies, user contacts, and photo documentation of the changes in resource conditions over time. Monitoring data would be used to manage visitor use, develop plans and projects to reduce visitor impacts, and meet visitor demand.

2.5.16 Livestock Grazing

Introduction

The Taylor Grazing Act of 1934 is the legislative authority providing for livestock grazing on and protection of public land. The Federal Land Policy Management Act of 1976 and the Public Rangeland Improvement Act of 1978 direct the management of public land for multiple use and sustained yield. Rangeland management strategies would provide for the maintenance or restoration of watershed function, nutrient cycling and energy flow, water quality, habitat for special status species, and habitat quality for populations and communities of native plants and animals. These management strategies have been supported by development of grazing standards and guidelines for the Mojave-Southern Great Basin and Northeastern Great Basin regions, which were adopted and approved by the Secretary of Interior in 1997 (Appendix A). Livestock grazing is managed in 239 allotments within the Ely District (see **Map 2.4-39** and Appendix R).

Desired Range of Conditions

Livestock grazing would occur in a manner and at levels consistent with the multiple use, sustained yield, and watershed function and health goals.

Goal

Manage the public lands to provide for a level of livestock grazing consistent with multiple use, sustained yield, and watershed function and health.

Management Common to All Alternatives (except Alternative D)

1. An area totaling 212,500 acres would remain closed to livestock grazing in conjunction with desert tortoise habitat and the three currently designated ACECs.
2. Allotments or portions of allotments would continue to be temporarily closed based on restoration activities.
3. Adjustments to stocking rates would be based on watershed analysis.

2.5.16.1 Parameter – Lands Available for Livestock Grazing

Management Common to All Alternatives (except Alternative D)

There are 212,500 acres closed to livestock grazing including grazing allotments or portions of grazing allotments located within ACECs. Allotments within the three existing ACECs include Mormon Mesa, Kane Springs, and Beaver Dam Slope. The Beacon, Sand Hollow, and Rox-Tule allotments were completely closed to livestock grazing in conjunction with the Desert Tortoise Amendment. Portions of the Breedlove, Delamar, Gourd Springs, Mormon Peak, Grapevine, and Lower Lake East allotments were reduced in total acreage and, therefore, portions were closed to livestock grazing (see **Map 2.4-39**).

Alternative A

Approximately 11,174,000 acres would be available for livestock grazing subject to modification associated with disposal actions. No new areas are identified for closure.

Changes to livestock grazing use resulting from reduced land acreage due to land disposals could include one or more of the following actions: reduction in stocking levels; distribution of livestock to other areas; a shorter grazing period; more intensive management practices (e.g., water hauling, fencing, and water development); or no changes in grazing management practices. No areas in addition to the 212,500 acres in the three existing ACECs would be closed to livestock grazing, but various acres are proposed for potential land disposal as discussed in Section 2.5.12.2, which would result in closure of such areas as they are sold.

The Haypress allotment would continue to be managed as at present. The National Mustang Association (existing livestock grazing permittee of the Haypress allotment) would continue to graze livestock (currently domestic horses). The 7,843 acres would not be managed as a horse preserve nor would it be identified for potential disposal.

Alternative B

Approximately 7,568,000 acres would be available for livestock grazing consistent with maintaining and restoring watershed function and health subject to modification associated with disposal actions. The

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remainder of the desert tortoise habitat within the Mojave Desert (approximately 542,100 additional acres) would be closed to livestock grazing (see **Map 2.4-39**).

In addition to the 212,500 acres in the existing ACECs, this alternative would close an additional 542,100 acres to livestock grazing in the remaining desert tortoise habitat portion of the Mojave Desert and approximately 3,038,100 acres would be closed in Rocky Mountain and desert bighorn sheep habitat. Aside from these closures, the alternative also would close to livestock grazing (25,660 acres in four of the new ACECs [see Section 2.5.22]), and various areas of potential land disposal as these areas are sold (see Section 2.5.12.2).

The Haypress allotment would be managed the same as Alternative A.

Alternative C

Approximately 11,164,400 acres would be available for livestock grazing subject to modification associated with disposal actions. Areas closed to grazing under this alternative include 212,500 acres associated with the three existing ACECs and 9,600 acres associated with three new ACECs (see Section 2.5.22). The Tamberlaine allotment would be used as forage reserves if the permit is relinquished.

The BLM would manage the 7,843 acres consisting of the Haypress allotment as a horse preserve in partnership with the National Mustang Association (existing livestock grazing permittee of the Haypress allotment), or some other entity. The Haypress allotment would be closed to livestock grazing. The 7,843 acres would be identified for potential disposal. If it is determined that it would further the objective of managing the area as a horse preserve and other disposal criteria are met, disposal could occur.

Alternative D

Livestock grazing would be eliminated throughout the District.

Alternative E

The area available for grazing would be approximately 11,170,700 acres. This alternative would involve closure of 3,300 acres within new ACECs.

The Haypress allotment would be managed the same as Alternative C.

2.5.16.2 Parameter – Permit Administration

Alternative A

Authorized active use would fluctuate above and below the total active use or level of use authorized in the grazing permit. Authorized active use above the total active use is temporary nonrenewable. Active use not activated is nonuse. Authorized active use would fluctuate based on annual forage production.

Over recent years, particularly during 1996, stocking levels have been reduced due to the impacts of drought. Active use also fluctuates based on economic conditions. On most allotments in recent years, BLM has approved applications by permittees, or has required permittees to use less forage than the authorized active use specified by their term permits. In those years when forage for livestock remains following use of the forage authorized by the term grazing permit, grazing use has been authorized on a limited basis as temporary nonrenewable. Temporary nonrenewable is authorized provided it is consistent with multiple use objectives and multiple uses of the allotment. The Ely Field Office's process for temporary nonrenewable grazing authorizations is presented in Appendix R.

Where appropriate, livestock grazing would be used as a tool to achieve the desired range of conditions for vegetation. Term permits would specify mandatory terms and conditions to include the kind and number of livestock, the period(s) of use, the allotment or pasture, and the amount of use in animal unit months in addition to other terms and conditions to assist in achieving the standards for rangeland health.

Alternative B

Authorized use would not exceed the total active use or level of use authorized in the grazing permit. Authorized active use would fluctuate based on annual forage production.

Where appropriate, livestock grazing would be used as a tool to achieve the desired range of conditions for vegetation. Term permits would specify mandatory terms and conditions to include the kind and number of livestock, the period(s) of use, the allotment or pasture, and the amount of use in animal unit months in addition to other terms and conditions to assist in achieving the standards for rangeland health.

Alternative C

Authorized use could exceed the total active use or level of use authorized in the grazing permit based on performance-based grazing. Adjustments due to fluctuations in production would be addressed through performance-based grazing.

Performance-based grazing is outcome-based, with clearly articulated desired end results that are measurable and observable. Performance-based grazing involves decisions made by the livestock permittee based on livestock grazing (stocking levels, areas of use, duration of use, on and off dates) and specific quantified resource objectives. Permittees would be given flexibility in how to achieve these results. This approach differs from traditional permitting, which directs permittees allowable management practices. Stocking levels, on and off dates, and areas of use could change from year to year. Terms and conditions would identify total active use. Where performance-based grazing is authorized, stocking levels could exceed the total active use. The terms and conditions of term permits would describe when and how specific livestock numbers and dates would be changed. Flexibility in management of livestock would be identified in the terms and conditions of term permits and annual grazing authorizations. The use of monitoring results such as stubble height, utilization levels, and streambank alteration, would not be included in annual authorizations but would be used to develop management adaptations for the next grazing season.

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Performance-based grazing also would be dependent upon the associated use of the area. Grazing use would be based on specific quantified resource objectives. Permittees would be given flexibility in how to achieve these results. Based on the primary use, active use would be authorized with the expected outcome of progressing toward and/or meeting the standards for rangeland health. Permittees would be expected to adjust livestock stocking levels, periods of use, and other practices due to drought, restoration activities, and for protection of public land resources due to fire.

Considerations relative to incorporating some level of performance-based grazing into grazing permits would include: past performance; willingness to commit to the extra effort required to practice performance based grazing; and whether the permittee has the capability to manage livestock, monitor resource conditions, and make the necessary adjustments in use.

Where appropriate, livestock grazing would be used as a tool to achieve the desired range of conditions for vegetation.

Alternative D

All livestock grazing would be eliminated within the District. Since such action is not consistent with existing regulations and policies, implementation of this alternative would require that the Ely District request exemption from existing regulations and policies pursuant to the Taylor Grazing Act, the Federal Land Policy Management Act, and other applicable laws.

Alternative E

Actual use would fluctuate above and below the total active use or level of use authorized in the grazing permit. Actual use would fluctuate based on annual forage production. Performance-based grazing would be authorized on a case-by-case basis. Changes in active use would be addressed through performance-based grazing where authorized.

Performance-based grazing would be authorized based on the permittee's past performance, willingness to commit to the extra effort required to practice performance-based grazing, and their capability to manage livestock, monitor resource conditions, and make the necessary adjustments in use as needed to achieve objectives and results. Terms and conditions of term permits and annual authorizations would vary depending upon whether performance-based grazing is authorized. In all cases, term permits would specify the kind and number of livestock, the period(s) of use, the allotment or pasture, and the amount of use in animal unit months. Where performance-based grazing is authorized, permittees would be given flexibility in how to achieve objectives and results. Where performance-based grazing is authorized, stocking rates could exceed active use. The terms and conditions of term permits would describe when and how specific livestock numbers and dates would be changed. Flexibility in management of livestock would be identified in the terms and conditions of term permits and annual grazing authorizations. Where performance based grazing is not authorized, terms and conditions would direct allowable management practices such as periods the allotment or pasture may be used, on and off dates, salting requirements, water hauling requirements, etc. These permittees would not be allowed the degree of flexibility to achieve resource objectives compared to performance-based grazing.

Stocking levels and grazing use would continue to be influenced by factors such as forage and water availability, watershed health, drought, economic conditions, and achievement of the standards for rangeland health.

Grazing use would be dependent upon the associated uses of the area (e.g., wild horses, critical wildlife habitat, special status species, special management designations, etc.). Grazing use would be based on specific quantified resource objectives. Management objectives would be developed for habitats and watersheds. Management objectives would be in accordance with the standards for rangeland health. Based on the associated uses, grazing use would be authorized with the expected outcome of progressing toward meeting the standards for rangeland health. Permittees would be expected to adjust livestock stocking levels, periods of use, and other practices due to drought, restoration activities, watershed condition, and forage availability, and for protection of public land resources due to fire.

Where appropriate, livestock grazing would be used as one of the tools to achieve the desired range of conditions for vegetation.

2.5.16.3 Parameter – Kind of Livestock

Alternative A

Conversions from cattle to sheep; or sheep to cattle, horse, or goat, would be authorized based on forage type, topography, and available water.

Current planning documents have identified some allotments as dual use and have identified carrying capacity for more than one kind of livestock. Conversions from one kind of livestock to another (e.g., sheep to cattle) have been authorized in some areas where dual use has been recognized. Conversions also have been authorized whether or not dual use has been recognized in past planning documents. In this case, the analysis and authorization of conversions are primarily based on forage type and condition of the vegetation community. Availability of the preferred forage in adequate amounts to support the conversion is a primary consideration.

Alternative B

Changes in kind of livestock would be authorized based on achievement of standards for rangeland health or other multiple use objectives as measured through watershed analysis.

Alternative C

Same as Alternative B.

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Alternative D

All livestock grazing would be eliminated throughout the District.

Alternative E

Same as Alternative B. Changes in kind of livestock also would be based on other factors including type of forage available and other uses in the area.

2.5.16.4 Parameter – Livestock Management in Bighorn Sheep Ranges

Alternative A

Domestic sheep would continue to be managed in consideration of the Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats (Instruction Memorandum No-98-140) when proposed changes to BLM grazing permits are being considered. This would apply relative to both Rocky Mountain bighorn and desert bighorn sheep.

Alternative B

Domestic livestock (sheep and cattle) grazing would be eliminated in all bighorn sheep (both Rocky Mountain and desert) ranges and migration routes.

Alternative C

Same as Alternative A for both Rocky Mountain and desert bighorn sheep.

Alternative D

No livestock grazing in the District.

Alternative E

Domestic sheep would continue to be managed in consideration of the Revised Guidelines for Management of Domestic Sheep and Goats in Native Wild Sheep Habitats (Instruction Memorandum No-98-140) when proposed changes to BLM grazing permits are being considered relative to Rocky Mountain bighorn sheep. Management of livestock relative to desert bighorn would be similar, except that no domestic sheep or goat grazing would be allowed within 9 miles of desert bighorn sheep habitat, except where topographic features or other barriers prevent physical contact (see **Map 2.4-40**).

2.5.16.5 Parameter – Non-use Relinquished Permits

Alternative A

The BLM would continue to allow for application of relinquished grazing permits.

Alternative B

Management of relinquished permits would be handled in a flexible manner to facilitate achievement of watershed goals and rangeland health standards. If the permit for the Tamberlaine allotment is relinquished, the allotment would be managed for wildlife.

Alternative C

Management of relinquished permits would be handled in a flexible manner to create forage reserves for research or temporary use by permittees who are displaced for any reason. The Tamberlaine allotment would be managed as a forage reserve if the permit is relinquished.

Alternative D

All livestock grazing would be eliminated throughout the District.

Alternative E

Same as Alternative C.

2.5.16.6 Parameter – Temporary Nonrenewable

Alternative A

Temporary nonrenewable grazing use would be authorized on a case-by-case basis.

Alternative B

No temporary nonrenewable grazing use would be authorized.

Alternative C

Same as Alternative A.

Alternative D

All livestock grazing would be eliminated throughout the District.

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Alternative E

Same as Alternative A.

2.5.16.7 Parameter – Water Hauling

Alternative A

Water hauling would be authorized to improve livestock distribution.

Alternative B

Water hauling would be authorized to achieve rangeland health standards on a watershed basis.

Alternative C

Same as Alternative A.

Alternative D

All livestock grazing would be eliminated throughout the District.

Alternative E

Same as Alternative B.

2.5.16.8 Monitoring of Livestock Grazing

Monitoring to assess rangeland health standards and watershed analysis would include records of actual livestock use, measurements of forage utilization, ecological site inventory data, cover data, soil mapping, and allotment evaluations or rangeland health assessments. Conditions and trends of resources affected by livestock grazing would be monitored to support periodic analysis/evaluation and site-specific adjustments of livestock management actions. Monitoring would determine when grazing would be authorized in burned areas, and would specify prescribed burn treatments or other types of treatments based on attainment of resource objectives.

2.5.17 Woodland and Native Plant Products

Introduction

The Federal Land Policy and Management Act directs BLM to "... manage public lands according to the principles of multiple-use and sustained yield"One of the multiple uses of resources within the District includes the use of woodland areas for fuelwood collection, pinyon nut harvesting, Christmas tree

2.5 Management Direction for Resource Programs

harvesting, posts and poles, seed collection, cactus and yucca collection, and other vegetation product collection. The availability of woodlands for these uses is dependent on the continued management of these woodlands in the long term. Vegetation management tools (e.g., prescribed fires, thinning) would allow for the regeneration of woodland vegetation types and the selective thinning of these communities to improve their overall health within the District and achievement of applicable Resource Advisory Council standards and the desired ranges of conditions for various types of woodlands as identified in previous sections. Commercial collection of cacti, yucca, and evergreen trees within the state also is regulated under Nevada Revised Statutes (N.R.S. 527.060.120) and the Nevada Administrative Code Chapter 527.

Desired Range of Conditions

Healthy woodlands and populations of other native plants would be available for the responsible harvesting of woodland and native plant products by the public, commercial interests, and American Indians. Access would be allowed for traditional and non-traditional uses.

Goal

Provide opportunities for traditional and non-traditional uses of vegetation products on a sustainable, multiple-use basis.

Management Common to All Alternatives

1. Bristlecone pine, limber pine, and swamp cedar would not be harvested for any vegetation product.
2. Seed harvest of special status plants would be prohibited except for research, federally/state endorsed propagation for restoration, or case-specific small scale commercial/personal use regulated under permit process. All special status seed harvest would be monitored by the BLM, in the form of permit requirements.
3. No more than 50 percent of the annual seed crop available in any one area would be harvested.

2.5.17.1 Parameter – Fuelwood Collection

Alternative A

Collection of fuelwood for personal use and commercial use would be allowed District-wide, except in closed areas. Species allowed for collection would be pinyon, juniper, and mountain mahogany.

Alternative B

Fuelwood collection would be allowed for personal and commercial use in designated areas only.

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Species allowed for collection would be pinyon, juniper, mountain mahogany, Gambel's oak, aspen, ponderosa pine, white fir, and spruce. Harvesting live trees (except for pinyon and juniper) would be allowed on a case-by-case basis in designated areas.

Fuelwood harvest allowed in a specific area would be implemented to achieve the desired range of conditions identified in Section 2.5.5, Vegetation. Areas where fuelwood harvest would hinder achievement of the desired range of conditions would be restricted. Areas and species available for fuelwood harvest could be adjusted during the watershed analysis process when site-specific data is available.

Alternative C

Same as Alternative A. Species allowed for collection would be pinyon, juniper, mountain mahogany, Gambel's oak, aspen, white fir, ponderosa pine, and spruce. No restrictions on harvesting live trees.

Alternative D

No fuelwood collection.

Alternative E

Same as Alternative A, except collection of other tree species could be designated on a case-by-case basis or through the watershed analysis process. If otherwise designated, the location and amount that could be collected would be specified.

2.5.17.2 Parameter – Pinyon Pine Nut Harvesting

Alternative A

Free personal use of up to 25 pounds per family would be allowed within the District. Commercial harvest sale areas would be designated throughout the District and sold through a competitive bidding process. When the competitive bidding is complete and the sales are awarded, the specific sale area would be documented on the permittee's contract.

Alternative B

Same as Alternative A except prior to designating areas for commercial use, consultation with American Indian tribes would occur. American Indians would not be subject to the 25-pound personal use limitation as long as the pine nuts are for personal use and not for resale or barter.

Alternative C

Same as Alternative A.

Alternative D

Hand collection of pinyon pine nuts for personal use would be allowed. Commercial use would not be allowed within the District.

Alternative E

Same as Alternative B.

2.5.17.3 Parameter – Christmas Tree Harvesting

Alternative A

Pinyon and juniper would continue to be available for personal and commercial use District-wide. Specific harvest locations for commercial use would be designated on the contract at the time of sale.

Alternative B

Pinyon, juniper, and white fir would be available for personal use District-wide. Only pinyon and juniper would be available for commercial use District-wide.

White fir would be available for commercial harvest if future site-specific planning activities (e.g., watershed analysis) determine that harvest would assist in achieving the desired range of conditions, health and resiliency of the stand, and site-specific objectives for the site. Specific harvest locations for commercial use would be designated on the contract at the time of sale.

Alternative C

Pinyon, juniper, spruce, and white fir would be available for personal and commercial use District-wide.

Alternative D

No Christmas tree harvesting would be allowed.

Alternative E

Same as Alternative B.

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2.5.17.4 Parameter – Post and Pole Harvesting

Alternative A

Pinyon and juniper would continue to be available for personal and commercial use District-wide, except in restricted areas. Commercial harvest locations would be designated on the contract at the time of sale.

Alternative B

Pinyon and juniper would be available for personal and commercial use District-wide, except in restricted areas. Aspen, fir, and spruce would be allowed on a case-by-case basis. If harvest would assist in achieving site-specific objectives, it would be designated open to harvest with specified limitations until desired conditions are achieved.

Alternative C

Pinyon, juniper, aspen, fir, and spruce would be available for personal and commercial use District-wide. Emphasis for tree harvest would be placed on areas identified for land disposal, if harvest would meet objectives for the tract of land.

Alternative D

No post and pole harvesting would be allowed.

Alternative E

Same as Alternative B.

2.5.17.5 Parameter – Seed Collection

Alternative A

Commercial use would be allowed on a case-by-case basis. Hand collection methods would be encouraged, and mechanical collection would be allowed on a case-by-case basis. If restoration activities are planned for a specific area, seed collection would not be allowed for at least 2 years prior to the planned restoration activity.

Alternative B

Commercial use would be allowed except in restoration areas. Hand collection methods would be preferred. Mechanical collection methods would be allowed if determined to meet watershed and plant community objectives. No more than half of the available seed for a particular species would be harvested within a given stand. If restoration activities are planned for a specific area, seed collection would not be allowed for at least 2 years prior to the planned restoration activity.

Alternative C

Same as Alternative B. Hand and mechanical collection methods would be allowed.

Alternative D

Hand collection would be allowed for personal use. Commercial use would not be allowed. If restoration activities are planned for a specific area, seed collection would not be allowed for at least 2 years prior to the planned restoration activity.

Alternative E

Commercial use (hand collection and limited mechanical collection) would be allowed except in restoration areas.

2.5.17.6 Parameter – Cactus and Yucca Collection

Alternative A

Collection for personal use would be allowed on a case-by-case basis, primarily associated with salvage operations. Salvage operations consist of removing the species from its original location and re-planting it in another location. Salvage operations would be conducted prior to any land disturbing activity that would destroy the cactus or yucca plants.

Alternative B

Same as Alternative A.

Alternative C

Personal and commercial use would be allowed District-wide in accordance with applicable state law.

Alternative D

Collection would not be allowed.

Alternative E

Personal and commercial use would be allowed on a case-by-case basis in accordance with applicable state law.

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2.5.17.7 Parameter – Other Vegetation Product (i.e., wildings, boughs, etc.) Collection

Alternative A

Personal and commercial use would be allowed on a case-by-case basis. Area for collection would be specified on the vegetation sales contract. Collection methods would be limited to those with the least surface disturbing activities.

Alternative B

Same as Alternative A.

Alternative C

Commercial use would be allowed District-wide.

Collection methods would be limited to those with the least surface disturbing activities.

Alternative D

Collection would not be allowed.

Alternative E

Same as Alternative A.

2.5.17.8 Monitoring of Woodland and Native Plant Products

BLM would periodically monitor to ensure that commercial use of woodland products within designated areas is in accordance with specifications provided in the contract and that public use throughout the District occurs in accordance with this plan. If monitoring shows that harvest in a specific area is causing nonattainment of vegetation objectives, the area would be closed until it is determined that objectives are being met and harvest could be allowed to resume. Outbreaks of disease and infestations of insects affecting woodland species would be monitored to ensure timely implementation of management actions to limit the spread and level of damage related to such problems.

2.5.18 Geology and Mineral Extraction

Introduction

The general mining laws give the public the right to locate and develop mining claims on public land. The Mining and Minerals Policy Act of 1970 declares that it is the continuing policy of the federal government to foster and encourage private enterprise in the development of domestic mineral resources. Section 102 of

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Federal Land Policy and Management Act of 1976 directs that the public land would be managed in a manner that recognizes the Nation's need for domestic sources of minerals and other commodities from the public lands, while managing these lands in a manner that would protect scientific, scenic, historic, archeological, ecological, environmental, air and atmospheric, and hydrologic values. The Bureau's mineral and national energy policy states that public lands shall remain open and available for mineral exploration and development unless withdrawal or other administrative action is justified in the national interest.

The Mineral Leasing Act of 1920, as amended, and the Geothermal Steam Act of 1970, as amended, provide the opportunity for the public to explore for, develop, and produce publicly owned leasable minerals.

The Materials Act of 1947, as amended, authorizes the disposal of mineral materials such as sand, gravel, stone, clay, and cinders.

Desired Range of Conditions

The Ely Field Office would provide for the responsible development of mineral resources to meet local, regional, and national needs, while providing for the protection of other resources and uses.

Goal

Allow for meeting the Nation's energy needs while providing environmentally responsible production of fluid leasable minerals, and geophysical exploration for energy resources on Public Lands. Allow development of solid leasable and locatable minerals in a manner to prevent undue and unnecessary degradation. Allow development of saleable minerals in a manner that would prevent undue and unnecessary degradation, meet public demand, and minimize adverse impacts to other resource values.

2.5.18.1 Parameter – Fluid Leasable Minerals

Management Common to All Alternatives

For all areas open to leasing, the lease would be subject to standard lease terms and conditions (Appendix L) and the district wide migratory bird stipulation. Other wildlife and threatened and endangered species restrictions not covered in lease stipulations would be covered under the standard terms and conditions which allows for up to 60-day timing deferments and 200 meter displacements (43 Code of Federal Regulations 3101.1-2). The Migratory Bird restriction for the Ely Field Office is as follows:

Migratory Bird Executive Order – Requires that no surface disturbance would take place during the time period of May 1 to July 15, for the protection of breeding migratory birds, prior to a determination by a qualified biologist that breeding migratory birds are not present. If active nests are located in the immediate project area, activities would not be permitted until the birds have fledged (left) the nest.

All stipulations and restrictions would apply to surface disturbing or drilling activities, and would not apply to production and maintenance activities.

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Under certain conditions, waivers, exceptions and modification of lease stipulations may be granted. A waiver is a permanent exemption of lease stipulation. An exception is a one time exemption to a lease stipulation which is determined on a case-by-case basis. A modification is a change to the provision of a lease stipulation, either temporarily or for the term of the lease. Generally, a waiver, exception, or modification may be approved if the record shows that the resource values have changed or if the lessee can demonstrate that operations can be conducted without causing unacceptable impacts and that less restrictive stipulations would be in the public interest. Waivers, exceptions or modifications can only be approved by the authorized officer. If the proposed waiver, exception, or modification is inconsistent with the resource management plan, the plan would be amended or the change to the stipulation would be disallowed.

A **Waiver** means the complete elimination of a stipulation from a particular lease contract. A lease stipulation is waived by the authorized officer after preparation of an environmental assessment and a decision is made that the stipulation in question is no longer required for that particular lease. The decision to waive a substantial stipulation requires a plan amendment and a 30-day public notice period prior to waiver.

An **Exception** is a case-by-case exception from a lease stipulation. The stipulation continues to apply to all other sites within the leasehold to which the restrictive criteria apply. Exceptions to leasing stipulations would be granted by the authorized officer if the reason for the exception is consistent with that analysis. No public notice is required for exceptions to lease stipulations which conform to the resource management plan. Other possible exceptions may be granted only upon plan amendment and public notification.

A **Modification** is a fundamental change to the provisions of a lease stipulation, either temporarily or for the term of the lease. A modification may, therefore, include an exception from or alteration to a stipulated requirement. Depending on the specific modification, the stipulation may or may not apply to all other sites within the lease hold to which the restrictive criteria applied.

Modifications to stipulations are made if and when resource management determines the stipulation is no longer effective as written. This situation occurs when new information shows that the protective measures are unnecessarily restrictive. Modification of a stipulation requires the preparation of an environmental assessment to determine the potential impacts and plan amendment or maintenance needs. If the modification is determined by the authorized officer to be substantial, a 30-day public notice would be issued prior to modifying the lease stipulation.

Alternative A

Exploration permits and leases would continue to be issued in those areas currently open to mineral leasing with stipulations as appropriate to protect other resources. Currently closed areas would remain closed. The current management direction is described in the Oil and Gas Leasing Amendment to the Egan RMP, the Caliente MFP, the Caliente MFP Amendment for the Management of the Desert Tortoise Habitat, the Schell MFP, and five Environmental Analysis Records which date back to 1976.

Open to Leasing

There would be approximately 7.75 million acres open for leasing under Alternative A with the restrictions discussed under management common to all alternatives.

Minor Restrictions- Traditional Surface Use/Timing

There would be approximately 2.29 million acres open for leasing with surface use and/or timing restrictions to protect wildlife and other resources. Operators would be able to apply for an exception if the resource was not present.

Major Restrictions – No Surface Occupancy

Major restrictions under this alternative include 231,200 acres of no surface occupancy. The no surface occupancy restriction would allow for directional drilling and production underneath the protected area, but there could be no actual surface disturbance within the protected boundaries.

Closed to Leasing

There would be approximately 1.12 million acres closed to leasing. The areas closed to leasing include approximately 1.08 million acres within designated wilderness and Wilderness Study Areas, and 48,800 acres of additional closures outside of the designated wilderness/Wilderness Study Areas including the following:

Closed

Basset Lake	Lands identified for potential disposal in Lincoln County
Cave Valley Cave Geologic Area	Newark Cave
Charcoal Ovens State Park	Open Space Conveyances
Cold Creek Reservoir Recreation Area	Shooting Range
Comins Recreation Area	State Prison
Goshute Canyon Natural Area	Thermal Springs (Mormans)
Goshute Cave Geologic Area	Toquop
Illipah Reservoir Recreation Area	Ward Recreation Site
Honor Camp	Wilderness
Kane Springs ACEC	Wilderness Study Areas

Proposed actions for geophysical exploration would be evaluated on a case-by-case basis and would not necessarily be subject to the same restrictions as shown for fluid leasing.

Table 2.5-12 presents a summary of the distribution of acres for Alternative A.

Map 2.4-42 shows the location of the leasing stipulations for this alternative.

Oil and gas and geothermal well drilling, production, and geophysical exploration would be subject to The Standard Practices and Procedures for Geophysical Operations and Conditions of Approval which are listed in Appendix L.

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Table 2.5-12
Summary of Fluid Leasing Acres by Alternatives

	Alternatives				
	A	B	C	D	E
Standard Terms and Conditions	7,752,700	1,117,600	4,051,100	0	1,117,700
Open – Minor Restrictions					
Programmatic Surface Use/Timing	0	8,552,400	228,000	0	8,581,100
Standard Surface Use/Timing	2,291,700	446,000	5,629,900	0	448,300
Open – Major Restrictions					
Closed					
No Surface Occupancy	231,200	36,100	56,600	0	40,000
Designated Wilderness and Wilderness Study Areas	1,075,600	1,075,600	1,075,600	1,075,600	1,075,600
Discretionary	48,800	172,300	358,800	10,324,400	137,300
Closed – Total	1,124,400	1,247,900	1,434,400	11,400,000	1,212,900
Total	11,400,000	11,400,000	11,400,000	11,400,000	11,400,000

Alternative B

Open to Leasing

Under Alternative B there would be approximately 1.12 million acres open to leasing with the restrictions discussed under management common to all alternatives.

Minor Restrictions – Programmatic Stipulations

Alternative B introduces programmatic stipulations that would apply only if the resource of concern was present at the time of ground disturbing activities. Under this alternative there would be very few areas that would not be subject to a potential programmatic resource stipulations. However, the stipulation language would allow more flexibility in protecting the resource and determining whether resource protection is really necessary. Leases and exploration permits would continue to be issued in those areas open to mineral leasing subject to the standard lease terms and conditions. Stipulations would be attached to leases to provide broad area programmatic protection of wildlife and wildlife habitat; specifically sage grouse, bighorn sheep, and ferruginous hawks. Programmatic stipulations also would be in place for special areas of cultural resources. For the wildlife species, the stipulations would require that any area of proposed disturbance be assessed by the BLM for the presence of that species or its habitat. If the assessment indicates that the species or habitat is not present, or likely to be present, then that wildlife stipulation would not apply. Should the assessment indicate that any of these species or special habitats is likely to occur in the proposed area of disturbance, the operator would be required to abide by the stipulation or further inventory the site. The cultural resource programmatic stipulation allows the lease holder to recognize areas of special or concentrated cultural resources that may require further mitigation.

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A total of approximately 8.55 million acres would be open to leasing subject to the programmatic restrictions described above. The lease language for these specific wildlife and cultural stipulations is as follows:

Cultural Stipulation

This lease contains lands which may have cultural sites of exceptional significance or fragility and would require additional measures before surface disturbing activities can occur. Therefore, the lessee may be required to do additional mitigation and/or reclamation on any leasing activities that occur within the areas indicated.

Pony Express Trail and Lincoln Highway Stipulation

Any activity planned within the viewshed of the Pony Express and California National Historic Trails, the Historic Lincoln Highway, National Scenic and Historic Trails, listed National Register Districts, or properties eligible under Criterion a, b, and/or c, must undergo a visual assessment. Appropriate mitigation of visual impacts would be implemented as necessary to keep the setting of the management corridor in as natural condition as possible.

To meet visual management objectives for the Pony Express National Historic Trail/Overland Trail (Instruction Memorandum NV-2004-004 and NV-2004-006) a Section 106 consultation under the National Historic Preservation Act with the State Historic Preservation Officer for a determination of effect must be completed prior to actual operations. The consultation procedures would follow the Nevada State Protocol between the Nevada BLM and the Nevada State Historic Preservation Officer. The consultation process may involve review by the Advisory Council on Historic Preservation and development of a Memorandum of Agreement with the State Historic Preservation Officer and Advisory Council on Historic Preservation. These procedures may delay the operation up to 120 additional days above the 60-day timing limitations allowed under Section 6 of the lease instrument. Treatment plans and data recovery also may be required at the expense of the operator prior to approval of operations. Data recovery also may result in additional delays which may exceed 120 days in addition to the Section 106 consultation process.

Wildlife Lease Stipulations

The ferruginous hawk and sage grouse restrictions would be in effect for the northern three quarters of the district and would involve almost 9 million of the 11.4 million acres of public land. The restriction for bighorn sheep would cover about 938,400 acres. Programmatic wildlife stipulations are as follows:

Sage Grouse Restriction – This lease contains lands which may be occupied by sage grouse which have been listed by the State of Nevada and the BLM as a sensitive species. Therefore, no surface disturbance would be allowed within an active sage grouse lek. No surface use would be allowed within 2 miles of an active sage grouse lek from midnight until 10 a.m. during the period March 15 through May 15. The determination of activity would be made by a qualified wildlife biologist.

Ferruginous Hawk Restriction – This lease contains lands which may be occupied by ferruginous hawks which have been listed by the State of Nevada and the BLM as a sensitive species. Therefore, ferruginous hawk nest sites would not be disturbed. No surface use would be allowed within 0.5 mile of an occupied

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ferruginous hawk nest during the period March 1 through June 30 or until the birds have fledged (left) the nest. The determination of activity would be made by a qualified biologist.

Bighorn Sheep Lease Restriction – This lease contains lands which may be occupied by bighorn sheep. No surface use would be allowed within occupied bighorn sheep habitats during the breeding season of August 15 through November 30 and within the lambing season of February 15 to May 31. The determination of sheep activity and their presence would be made by a qualified biologist.

Minor Restrictions - Traditional Surface Use/Timing Stipulations

About 446,000 acres would be open to leasing and subject to minor constraints, primarily surface use and seasonal timing restrictions. For Alternative B, this involves only the desert tortoise habitat. The lease language for the desert tortoise habitat is as follows:

Open to Leasing with Minor Restriction (Timing)

Desert Tortoise Habitat

No surface use is allowed from March 15 to October 15. This stipulation does not apply to operation and maintenance of production facilities.

Open to Leasing with Minor Restriction (Controlled Surface Use)

Desert Tortoise Habitat

Unless otherwise authorized, access to this leasehold, and operations would be limited to the existing roads and trails.

Major Restrictions – No Surface Occupancy

About 36,100 acres would be subject to major restrictions, specifically no surface occupancy, to avoid impacts to certain wildlife, cultural resources, scenic, and natural features. This restriction would allow for directional drilling and production underneath the protected area, but there could be no actual surface disturbance within the protected boundaries. The following areas would have a no surface occupancy restriction:

Ash Springs Cultural Site

Blue Mass Scenic Area ACEC

Bristol Wells

Chief Mountain Trailheads

Cleve Creek

Delamar

Egan Crest Trailhead

Goshute Canyon ACEC

Hendry's Creek / Rock Animal Corral ACEC

Heusser Bristlecone ACEC

Illipah Reservoir

Meadow Valley Campground

Mt. Grafton ACEC

Osceola and Osceola Ditch ACEC

Rose Guano Bat Cave ACEC

Sacramento Pass

Swamp Cedar ACEC

Wildlife Protective Withdrawals

Closed to Leasing

A total of approximately 1.25 million acres would be closed to leasing. The current designated wilderness and Wilderness Study Areas account for approximately 1.09 million acres. Closed areas outside of the designated wilderness/Wilderness Study Areas total about 172,300 acres. These areas include the following:

Andies Mine Trilobite Site	Newark Cave
Baker Archaeological Site ACEC	Open Space Conveyances
Basset Lake	Pescio Cave
Caliente Withdrawal	Pygmy Sage Natural Area
Cave Valley Cave Geologic Area	Ruby Marsh Land Withdrawal
Charcoal Ovens State Park	Shooting Gallery ACEC
Chisolm Mine Trilobite Site	Shooting Range
Cold Creek Reservoir Recreation Area	Shoshone Ponds ACEC
Condor Canyon ACEC	Snake Creek Indian Burial Cave ACEC
Comins Recreation Area	State Prison
Goshute Cave Geologic Area	Toquop
Honeymoon Hill/City of Rocks ACEC	Ward Recreation Site
Honor Camp	White River Petroglyph Area
Kane Springs ACEC	Designated Wilderness
Lands identified for potential disposal in Lincoln County	Wilderness Study Areas
Lower Meadow Valley Wash ACEC	Withdrawals around communities
Mount Irish ACEC	

No geophysical exploration would be allowed in areas closed to leasing or with No Surface Occupancy.

See **Table 2.5-12** for a summary of the distribution of acres for Alternative B:

Map 2.4-43 shows the location of the leasing stipulations for this alternative.

Site-specific terms and conditions for geophysical exploration, and the conditions of approval for permits to drill, would be compiled from the complete list of Standard Terms and Conditions for Alternatives B, C, and E that are shown in Appendix L.

Alternative C

Open to Leasing

A total of approximately 4.05 million acres would be open to leasing with the restrictions discussed under management common to all alternatives.

Minor Restrictions – Programmatic Stipulations

Alternative C would stay with the more traditional surface use and geographically limited timing stipulations for wildlife. There would be no programmatic restrictions for wildlife or their habitats. Approximately

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228,000 acres would be subject to the programmatic cultural stipulations as described in Alternative B. There is considerable overlap between the programmatic cultural stipulations and other resource surface use/timing restrictions described below:

Minor Restrictions - Traditional Surface Use/Timing Stipulations

About 5.63 million acres would be open to leasing and subject to minor constraints, primarily surface use and seasonal timing restrictions. This involves the same approximately 446,000 acres of desert tortoise habitat as described in Alternative B as well as the traditional timing restrictions for wildlife and their habitat, specifically sage grouse, ferruginous hawks, and bighorn sheep. These wildlife species were listed as programmatic stipulations in Alternative B. For Alternative C, the restriction would be required for these areas indicated unless the lessee applied for an exception. Some recreation sites also have surface use restrictions in Alternative C rather than the closed or no surface occupancy designation of Alternative B. The lease language for these traditional surface use/timing restrictions are as follows:

Open to Leasing with Minor Restrictions (Timing)

Desert Tortoise Habitat Stipulation

No surface use is allowed from March 15 to October 15. This stipulation does not apply to operation and maintenance of production facilities.

Sage Grouse Stipulation – No surface disturbance would be allowed within an active sage grouse lek. No surface use would be allowed within 2.0 miles of an active sage grouse lek from midnight until 10 a.m. during the period March 1 through May 15.

Ferruginous Hawk Stipulation – Ferruginous hawk nest sites would not be disturbed. No surface use would be allowed within 0.5 mile of an occupied ferruginous hawk nest during the period March 1 through June 30 or until the birds have fledged (left) the nest.

Bighorn Sheep Stipulation – No surface use would be allowed within occupied bighorn sheep habitats during the breeding season of August 15 through November 30 and within the lambing season of February 15 to May 31.

Open to Leasing with Minor Restriction (Controlled Surface Use)

Desert Tortoise Habitat Stipulation

Unless otherwise authorized, access to this leasehold, and operations would be limited to the existing roads and trails.

Recreation Resource Stipulation – No surface or underground disturbance is allowed to occur within 100 yards (horizontally or vertically) of identified important cave resources or developed recreation sites. For the purpose of:

- Protecting important cave resources, including bat habitat.
- Maintaining the natural setting of these scenic and recreation use areas.

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- Preserving the resource upon which the recreation is based.
- Allowing visitors to experience recreation opportunities without conflicts from Leasing exploration and development.

Major Restrictions – No Surface Occupancy

About 56,600 acres would be subject to major restrictions, specifically no surface occupancy, to avoid impacts to certain wildlife, cultural resources, scenic, and natural features. This restriction would allow for directional drilling and production underneath the protected area, but there could be no actual surface disturbance within the protected boundaries. Kane Springs ACEC also would be listed as no surface occupancy under Alternative C rather than closed as in the other alternatives.

The following areas would have a no surface occupancy restriction:

Ash Springs Cultural Site	Goshute Canyon ACEC
Rose Guano Bat Cave ACEC	Hendry's Creek / Rock Animal Corral ACEC
Bristol Wells	Kane Springs ACEC
Delamar	Osceola and Osceola Ditch ACEC
Garrison Archeology Site	Wildlife Protective Withdrawals

Closed to Leasing

A total of approximately 1.43 million acres would be closed to leasing. The current designated wilderness and Wilderness Study Areas account for approximately 1.08 million acres. Closed areas outside of the designated wilderness/Wilderness Study Areas total about 69,100 acres. These areas include the following:

Andies Mine Trilobite Site	Newark Cave
Baker Archaeological Site ACEC	Open Space Conveyances
Basset Lake	Pygmy Sage ACEC
Caliente Withdrawal	Ruby Marsh Land Withdrawal
Cave Valley Cave Geologic Area	Shooting Gallery ACEC
Charcoal Ovens State Park	Shooting Range
Chisolm Mine Trilobite Site	Shoshone Ponds ACEC
Cold Creek Reservoir Recreation Area	Snake Creek Indian Burial Cave ACEC
Condor Canyon ACEC	State Prison
Comins Recreation Area	Toquop
Haypress Horse Preserve	Ward Historic Mining District ACEC
Honeymoon Hill/City of Rocks ACEC	Ward Recreation Site
Honor Camp	White River Petroglyph Area
Lands identified for potential disposal in Lincoln County	Designated Wilderness
Lower Meadow Valley Wash ACEC	Wilderness Study Areas
Mount Irish ACEC	Withdrawals around communities

Geophysical exploration would be considered in areas closed to leasing or with no surface occupancy and/or timing restrictions, based on impacts identified in site-specific analysis.

2.0 ALTERNATIVES

See **Table 2.5-12** for a summary of the distribution of acres for all alternatives.

Map 2.4-44 shows the location of the leasing stipulations for this alternative.

Site-specific terms and conditions for geophysical exploration, and the conditions of approval for permits to drill, would be compiled from the complete list of Standard Terms and Conditions for Alternatives B, C, and E that are shown in Appendix L.

Alternative D

Alternative D would exclude all new discretionary uses of the public lands including mineral leasing. Therefore, under this alternative the entire district would be closed to mineral leasing. Except for honoring existing leases, new leases and new exploration would not occur. This alternative may be considered extreme and not in conformance with the President's Energy Policy. However, the alternative is included for purposes of impact comparison.

Alternative E

Mineral leasing restrictions for Alternative E would be the same as Alternative B, with the following exceptions:

- Honeymoon Hill/City of Rocks ACEC would be designated as "No Surface Occupancy" rather than "Closed."
- Pahroc Rock Art ACEC would be designated as "Closed" rather than having surface use/timing stipulations.
- Approximately 7,843 acres in the Haypress allotment would be designated as "Closed" rather than having surface use/timing stipulations.

Table 2.5-12 presents a summary of the distribution of acres for all alternatives.

Map 2.4-45 shows the location of the leasing stipulations for this alternative.

2.5.18.2 Parameter – Solid Leasable Minerals

Management Common to All Alternatives

None.

Alternative A

There would be approximately 10.26 million acres of federal mineral estate open for development of solid leasable minerals, subject to best management practices and standard operating procedures. There are no solid leasable operations to date within the Ely District. Lands currently open for mineral activities would continue to be available for leasing of solid minerals. Most existing withdrawals closed to locatable mineral entry are not closed to solid leasing unless specifically designated. Even so, under Alternative A, those areas closed to locatable minerals would likely not be made available for solid mineral leasing.

There would be approximately 1.14 million acres closed to solid mineral leasing. This includes approximately 1.08 million acres of designated wilderness and Wilderness Study Areas and another 61,000 acres outside of designated wilderness/Wilderness Study Areas. **Map 2.4-46** shows the location of areas that would be closed to both locatable minerals and solid leasable minerals. See the list under Alternative A (Locatable Minerals) for the areas that would be closed to solid mineral leasing.

Standard practices and procedures for solid leasable operations under this alternative would be compiled on a site-specific basis from the Standard Terms and Conditions for Geophysical Exploration and Conditions of Approval for Application Permits to Drill that are listed in Appendix L. Selections from the Recommended Operating Procedures for Exploration/Mining Activities in the Ely District may be applied as well.

Table 2.5-13 presents a summary of the distribution of acres for all alternatives.

Table 2.5-13
Summary of Solid Leasing Acres by Alternative

	Alternatives				
	A	B	C	D	E
Solid Leasable					
Open	10,263,400	10,121,000	9,914,000	0	10,165,600
Solid Leasable					
Closed	1,136,600	1,279,000	1,486,000	11,400,000	1,234,400
Sum	11,400,000	11,400,000	11,400,000	11,400,000	11,400,000

Alternative B

There would be approximately 10.12 million acres of federal mineral estate open for solid mineral leasing, subject to best management practices and standard operating procedures.

A total of approximately 1.28 million acres would be closed to solid mineral leasing. This includes approximately 1.08 million acres of designated wilderness and Wilderness Study Areas and an additional 203,400 acres outside of designated wilderness/Wilderness Study Areas. Closed acres would be the same as that shown for Alternative B (Locatable Minerals). The additional acreage involves the new areas of proposed ACECs, new areas of cultural and recreation resources, and withdrawals around communities.

2.0 ALTERNATIVES

Map 2.4-47 shows the location of areas that would be closed to both locatable and solid leasable minerals for Alternative B. See Alternative B (Locatable Minerals) for a list of the areas that would be closed.

Standard practices and procedures for solid leasable operations under these alternatives would be compiled on a site-specific basis from the complete list of Standard Terms and Conditions for Alternatives B, C, and E that are shown in Appendix L.

Alternative C

There would be approximately 9.91 million acres of federal mineral estate open for solid mineral leasing, subject to best management practices and standard operating procedures.

A total of approximately 1.49 million acres would be closed to solid mineral leasing. This includes the approximately 1.08 million acres of designated wilderness and Wilderness Study Areas and an additional 410,400 acres outside of designated wilderness/Wilderness Study Areas. Alternative C actually has fewer resource acres withdrawn as compared to Alternative B, even though there are more total acres withdrawn. This is due to the increased acres of community land withdrawals in this alternative. **Map 2.4-48** shows the location of areas that would be closed to both locatable and solid leasable minerals for this alternative. See Alternative C (Locatable Minerals) for a list of the areas that would be closed.

Standard practices and procedures for solid leasable operations under these alternatives would be compiled on a site-specific basis from the complete list of Standard Terms and Conditions for Alternatives B, C and E that are shown in Appendix L.

See **Table 2.5-13** for a summary of the distribution of acres for Alternative C.

Alternative D

Alternative D would exclude all new discretionary uses of the public lands including mineral leasing. Therefore, under this alternative the entire district would be closed to solid mineral leasing. Except for honoring existing leases, new leases and new exploration would not occur. Currently there are no active solid mineral leases on the Ely District.

Alternative E

Alternative E would be the same as Alternative B, with the following exceptions:

- Ward Mining District ACEC would be approximately 8,500 acres smaller under Alternative E compared to Alternative B.
- Ward Mining District ACEC would be "Open" rather than "Closed" to solid leasable and locatable materials.

- Approximately 7,843 acres in the Haypress allotment would be designated as "Closed" rather than "Open."

Table 2.5-13 presents a summary of the distribution of acres for all alternatives.

Map 2.4-49 shows the location of the leasing stipulations for this alternative.

2.5.18.3 Parameter – Locatable Minerals

Management Common to All Alternatives

None.

Alternative A

There would be approximately 10.26 million acres of federal mineral estate open for development of locatable minerals. Lands currently open for mineral activities would continue to be available.

There would be approximately 1.28 million acres proposed for withdrawal to mineral development. This includes approximately 1.08 million acres that are currently designated as designated wilderness and Wilderness Study Areas and 61,000 acres outside of designated wilderness/Wilderness Study Areas. Map 2.4-46 shows the location of areas that would be proposed for withdrawal to locatable minerals. The following areas would be withdrawn from locatable mineral entry:

Ash Springs Withdrawal	Open Space Conveyances
Baker Archaeological Site	Pony Springs Withdrawal
Basset Lake	Pygmy Sage Natural Area
Blue Mass Scenic Area	Rose Guano Cave Natural Area
Caliente BLM Withdrawal	Ruby Marsh Withdrawal
Cave Valley Cave Geologic Area	Sacramento Pass
Charcoal Ovens State Park	Shooting Range
Cleve Creek	Shoshone Ponds Natural Area
Cold Creek Reservoir Recreation Area	Snake Creek Indian Burial Cave
Comins Recreation Area	State Prison
Federal Lands Transaction Facilitation Act lands	Thermal Springs (Mormans)
Goshute Cave Geologic Area	Toquop
Goshute Cave Natural Area	Ward Recreation Site
Heusser Bristlecone Research Natural Area	Ward Trailhead
Honor Camp	Whipple Cave Geologic Area
Illipah Reservoir	White River Petroglyph Site
Kane Springs ACEC	Designated Wilderness
Lands identified for potential disposal in Lincoln County	Wilderness Study Areas
Newark Cave	

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Standard practices and procedures for locatable mineral operations under this alternative would be compiled from the Recommended Operating Procedures for Exploration/Mining in the Ely District list in Appendix L.

Table 2.5-14 presents a summary of the distribution of acres for all alternatives.

Table 2.5-14
Summary of Locatable Minerals Acres by Alternative

	Alternatives				
	A	B	C	D	E
Locatable Open	10,263,400	10,121,000	9,914,000	4,189,000	10,165,600
Locatable Closed	1,136,600	1,279,000	1,486,000	7,211,000	1,234,400
Sum	11,400,000	11,400,000	11,400,000	11,400,000	11,400,000
Acres closed outside of designated wilderness/ Wilderness Study Areas	61,000	203,400	410,400	6,135,400	158,800

Alternative B

There would be approximately 10.12 million acres of federal mineral estate open for locatable mineral development, subject to the prevention of unnecessary or undue degradation of public lands.

A total of approximately 1.28 million acres would be proposed for withdrawal to mineral entry. This includes approximately 1.08 million acres of designated wilderness and Wilderness Study Areas and an additional 203,400 acres outside of designated wilderness/Wilderness Study Areas. For Alternative B, this additional acreage includes the new areas of proposed ACECs, new areas of cultural and recreation resources, land corridors from the Lincoln County Lands Act, and withdrawals around communities. Some of the existing withdrawals would be relocated, reduced or enlarged, and in a few cases, re-opened to locatable mineral entry. Map 2.4-47 shows the location of areas that would be proposed for withdrawal to locatable minerals for this alternative. The following locations would be closed:

Andies Mine Trilobite Site	Lands identified for potential disposal in Lincoln County
Ash Springs Cultural Site	Lower Meadow Valley Wash ACEC
BLM Radio Withdrawal	Mount Irish ACEC
Baker Archaeological Site ACEC	Newark Cave
Basset Lake	Open Space Conveyances
Blue Mass Scenic Area ACEC	Pahroc Roc Art ACEC
Caliente Withdrawal	Pescio Cave
Cave Valley Cave Geologic Area	Pony Springs Withdrawal
Charcoal Ovens State Park	Pygmy Sage Natural Area

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Chief Mountain Trailheads	Rose Guano Bat Cave ACEC
Chisolm Mine Trilobite Site	Ruby Marsh Withdrawal
Cleve Creek	Sacramento Pass
Cold Creek Reservoir Recreation Area	Shooting Gallery ACEC
Condor Canyon ACEC	Shooting Range
Comins Recreation Area	Shoshone Ponds ACEC
Egan Crest Trailhead	Snake Creek Indian Burial Cave ACEC
Garrison Archaeology Site	State Prison
Goshute Canyon ACEC	Swamp Cedar ACEC
Goshute Cave Geologic Area	Toquop
Grapevine Canyon	Ward Mining District ACEC
Hendry's Creek/Rock Animal Corral ACEC	Ward Recreation Site
Heusser Bristlecone ACEC	White River Petroglyph Site
Honeymoon Hill/City of Rocks ACEC	Designated Wilderness
Honor Camp	Wilderness Study Areas
Illipah Reservoir	Wildlife Protective Withdrawal
Kane Springs ACEC	Withdrawals around communities
Mount Grafton ACEC	

Site-specific terms and conditions for locatable mineral operations under this alternative would be compiled from the complete list of Standard Terms and Conditions for Alternatives B, C, and E that are shown in Appendix L.

See **Table 2.5-14** for a summary of the distribution of acres for all alternatives.

Alternative C

There would be approximately 9.91 million acres of federal mineral estate open for locatable mineral development, subject to the prevention of unnecessary or undue degradation of public lands.

A total of approximately 1.49 million acres would be proposed for withdrawal to locatable mineral entry. This includes approximately 1.08 million acres of designated wilderness and Wilderness Study Areas and an additional 410,400 acres outside of designated wilderness/Wilderness Study Areas. Alternative C actually has fewer resource areas withdrawn as compared to Alternative B, even though there are more total acres withdrawn. This is due to the increased acres of community lands withdrawals in this alternative. **Map 2.4-48** shows the location of areas that would be proposed for withdrawal to locatable minerals for this alternative. The following locations would be proposed for withdrawal for Alternative C:

Andies Mine Trilobite Site	Open Space Conveyances
Ash Springs Cultural Site	Pahroc Roc Art ACEC
BLM Radio Site Withdrawal	Pescio Cave
Baker Archaeological Site ACEC	Pony Springs Withdrawal
Basset Lake	Pygmy Sage ACEC

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Blue Mass Scenic Area ACEC	Rose Guano Bat Cave ACEC
Caliente Withdrawal	Ruby Marsh Withdrawal
Cave Valley Cave Geologic Area	Sacramento Pass
Charcoal Ovens State Park	Shooting Gallery ACEC
Chief Mountain Trailheads	Shooting Range
Chisolm Mine Trilobite Site	Shoshone Ponds ACEC
Cleve Creek	Snake Creek Indian Burial Cave ACEC
Cold Creek Reservoir Recreation Area	State Prison
Condor Canyon ACEC	Swamp Cedar ACEC
Comins Recreation Area	Toquop
Egan Crest Trailhead	Ward Mining District ACEC
Garrison Archaeology Site	Ward Recreation Site
Goshute Canyon ACEC	White River Petroglyph Site
Goshute Cave Geologic Area	Designated Wilderness
Grapevine Canyon	Wilderness Study Areas
Haypress Horse Preserve	Wildlife Protective Withdrawal
Hendry's Creek/Rock Animal Corral ACEC	Withdrawals around communities
Heusser Bristlecone ACEC	Newark Cave
Honeymoon Hill/City of Rocks ACEC	Open Space Conveyances
Honor Camp	Pahroc Roc Art ACEC
Illipah Reservoir	Pescio Cave
Kane Springs ACEC	Pony Springs Withdrawal
Lands identified for potential disposal in Lincoln County	Pygmy Sage ACEC
Lower Meadow Valley Wash ACEC	Rose Guano Bat Cave ACEC
Meadow Valley Campground	Ruby Marsh Withdrawal
Mount Grafton ACEC	Sacramento Pass
Mount Irish ACEC	Shooting Gallery ACEC
Newark Cave	

Site-specific terms and conditions for locatable mineral operations under this alternative would be compiled from the complete list of Standard Terms and Conditions for Alternatives B, C, and E that are shown in Appendix L.

See **Table 2.5-14** for a summary of the distribution of acres for all alternatives.

Alternative D

There would be approximately 4.19 million acres of federal mineral estate open for locatable mineral development, subject to the prevention of unnecessary or undue degradation of public lands, and stringent reclamation requirements including all native seeds and the elimination of all exotic species and noxious weeds. This alternative would emphasize protection of native sagebrush and pinyon-juniper communities as well as cultural and recreational resources of concern.

2.5 Management Direction for Resource Programs

There would be approximately 7.21 million acres proposed for withdrawal to locatable mineral entry. All special designated areas and sensitive habitat from all the alternatives would be proposed for withdrawal to locatable entry. The withdrawn areas include approximately 1.08 million acres of designated wilderness and Wilderness Study Areas, approximately 5.9 million acres of sage grouse habitat, and about 200,000 acres of cultural and recreational areas outside of these areas. The withdrawn cultural and recreational areas include all special designation areas from Alternatives A, B, C, and E, and all proposed ACECs from Alternative C.

This alternative may be considered extreme and not in conformance with the 1872 Mining Law, as amended. However, the alternative is included for purposes of impact comparison.

See **Table 2.5-14** for a summary of the distribution of acres for all alternatives.

Map 2.4-50 shows the location of areas that would be proposed for withdrawal to locatable minerals for Alternative D.

Site-specific terms and conditions for locatable mineral operations under this alternative would be compiled from the complete list of Standard Terms and Conditions for Alternative D as well as selections from Alternatives B and C that are shown in Appendix L.

Alternative E

Alternative E would be the same as Alternative B, with the following exceptions:

- Ward Mining District ACEC would be approximately 8,500 acres smaller under Alternative E compared to Alternative B.
- Ward Mining District ACEC would be "Open" rather than "Closed" or "Proposed for Withdrawal" to solid leasable and locatable materials.
- Approximately 7,843 acres in the Haypress allotment would be designated as "Proposed for Withdrawal" rather than "Open."

See **Map 2.4-49**.

2.5.18.4 Parameter – Saleable Minerals

Management Common to All Alternatives

None.

2.0 ALTERNATIVES

Alternative A

There would be approximately 10.04 million acres of federal mineral estate open for saleable mineral disposal, subject to best management practices and standard operating procedures. Lands currently open for mineral material disposal would continue to be available. Saleable mineral pits could not be located closer than 10 miles apart in the old Schell Resource area and would remain unregulated in other areas of the district.

There would be approximately 1.36 million acres closed to saleable mineral disposal. This includes approximately 1.08 million acres of designated wilderness and Wilderness Study Areas and 288,100 acres outside of designated wilderness/Wilderness Study Areas. **Map 2.4-51** shows the location of areas that would be closed. The following locations would be closed to saleable mineral disposal:

Ash Springs Recreation Site	Mount Grafton Scenic Area
Ash Springs Withdrawal	Newark Cave
Baker Archaeological Site	Open Space Conveyances
Baker Creek Natural Area	Pescio Cave
Basset Lake	Pony Express Trail
Bat Cave and Guano Mine Historic Area	Pony Springs Withdrawal
Blue Mass Scenic Area	Pygmy Sage Natural Area
Caliente BLM Withdrawal	Ruby Marsh Withdrawal
Cave Valley Cave Geologic Area	Shoshone Ponds Natural Area
Charcoal Ovens State Park	Shooting Range
Cleve Creek Recreation Site	Snake Creek Indian Burial Cave
Cold Creek Reservoir Recreation Area	State Prison
Condor Canyon ACEC	Sunshine Locality Archaeological Site
Comins Recreation Area	Swamp Cedar Natural Area
Garrison Archaeological Site	Thermal Springs (Mormans)
Goshute Cave Geologic Area	Toquop
Goshute Cave Natural Area	Ward Recreation Site
Heusser Bristlecone Research Natural Area	Ward Trailhead
Honor Camp	Weaver Creek Scenic Area
Illipah Reservoir	Whipple Cave Geologic Area
Kane Springs ACEC	White River Petroglyph Site
Kious Spring Scenic Area	Designated Wilderness
Lands identified for potential disposal in Lincoln County	Wilderness Study Areas
Leviathan Cave Natural Area	Withdrawals around communities
Lincoln Highway	

Site-specific terms and conditions for saleable mineral sales under this alternative would be compiled from the complete list of Standard Terms and Conditions that are shown in Appendix L.

Table 2.5-15 presents a summary of the distribution of acres for all alternatives.

Table 2.5-15
Summary of Saleable Minerals Disposal Acres by Alternative

	Alternatives				
	A	B	C	D	E
Mineral Material Open	10,036,300	9,564,300	9,375,600	0	9,608,400
Mineral Material Closed	1,363,700	1,835,700	2,024,400	11,400,000	1,791,600
Sum	11,400,000	11,400,000	11,400,000	11,400,000	11,400,000
Acres closed outside of Wilderness Study Areas	288,100	760,100	948,800	10,324,400	716,000

Alternative B

There would be approximately 9.56 million acres of federal mineral estate open for saleable mineral disposal, subject to best management practices and standard operating procedures. Additional withdrawals for saleable mineral disposal would occur in this alternative as compared to Alternative A. Saleable mineral pits could not be located closer than 5 miles apart in any area of the district.

There would be approximately 1.84 million acres that would be closed to saleable mineral disposal. This includes approximately 1.08 million acres of designated wilderness and Wilderness Study Areas and 760,100 acres outside of designated wilderness/Wilderness Study Areas. In addition to the acres withdrawn in Alternative A, all proposed and established ACECs, select recreational sites, and cultural sites, including the Pony Express Trail and other National Scenic trails would be closed. **Map 2.4-52** shows the location of areas that would be closed. The following locations would be closed to saleable mineral disposal:

Alamo Pahrnagat Rock Art
 Andies Mine Trilobite Site
 Ash Springs Cultural Site
 Baker Archaeological Site ACEC
 Basset Lake
 Bennet Springs
 Black Canyon Petroglyphs
 Wildlife Protective Withdrawal
 Blue Mass Scenic Area ACEC
 Heusser Bristlecone ACEC
 Bristol Wells
 Caliente Withdrawal
 Carbonari District
 Cave Valley Cave Geologic Area
 Charcoal Ovens State Park

Mariah Site (Pahrnagat)
 Meadow Valley Campground
 Mormon Mountains Archaeological Site
 Mount Grafton ACEC
 Mount Irish ACEC
 Newark Cave
 Open Space Conveyances
 Osceola and Osceola Ditch ACEC
 Pahroc Roc Art ACEC
 Panaca Summit/Modena Obsidian Site
 Park Range Aboriginal Site
 Pescio Cave
 Pony Express Trail
 Pony Springs Withdrawal
 Pygmy Sage Natural Area

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Chief Mountain Trailheads	Rainbow Canyon
Chisolm Mine Trilobite Site	Reed Cabin Summit
Christmas Wash	Rice Family Cemetery
Cleve Creek	Rose Guano Bat Cave ACEC
Cold Creek Reservoir Recreation Area	Rose Valley
Condor Canyon ACEC	Ruby Marsh Withdrawal
Crystal Wash (Pahranagat)	Sacramento Pass
Comins Recreation Area	Sand Dune Site
Daub Site (Upper Meadow)	Sawmill Canyon
Delamar	Shooting Gallery ACEC
Egan Crest Trailhead	Shooting Range
Frenchy Lake (Pahranagat)	Shoshone Ponds ACEC
Garrison Archaeology Site	Six Mile Flat and Hiko
Goshute Canyon ACEC	Snake Creek Indian Burial Cave ACEC
Goshute Cave Geologic Area	State Prison
Goshute Lake	Sunshine Locality Archaeological Site
Grapevine Canyon	Swamp Cedar ACEC
Hell's Half Acre (Pahranagat)	Tempiute Obsidian Source
Hendry's Creek/Rock Animal Corral ACEC	Toquop
Honeymoon Hill/City of Rocks ACEC	Tri-County Paleo Site
Honor Camp	Tunnel Canyon
Illipah Reservoir	Ward Mining District ACEC
Lakes Valley Paleo Shoreline	Ward Recreation Site
Kane Springs ACEC	White River Petroglyph Site
Lands identified for potential disposal in Lincoln County	Designated Wilderness
Lincoln Highway	Wilderness Study Areas
Lower Meadow Valley Wash ACEC	Withdrawals around communities
Mahoney Canyon Quarry	

Standard practices and procedures for operations under this alternative are described for Alternatives B, C, and E in Appendix L.

See **Table 2.5-15** for a summary of the distribution of acres for all alternatives.

Alternative C

There would be approximately 9.38 million acres of federal mineral estate open for saleable mineral disposal, subject to best management practices and standard operating procedures. In this alternative there would be fewer recreation sites that would be closed to saleable minerals.

There would be approximately 2.02 million acres that would be closed to saleable mineral disposal. This includes approximately 1.08 million acres of designated wilderness and Wilderness Study Areas and 948,800 acres outside of designated wilderness/Wilderness Study Areas. **Map 2.4-53** shows the location of areas that would be closed. The following locations would be closed to saleable mineral disposal:

2.5 Management Direction for Resource Programs

Alamo (Pahranagat Rock Art)	Meadow Valley Campground
Andies Mine Trilobite Site	Mormon Mountains Archaeology Site
Ash Springs Cultural Site	Mount Grafton ACEC
Baker Archaeological Site ACEC	Mount Irish ACEC
Basset Lake	Newark Cave
Bennet Springs	Open Space Conveyances
Black Canyon Petroglyphs	Osceola and Osceola Ditch ACEC
Blue Mass ACEC	Pahroc Roc Art ACEC
Bristol Wells	Panaca Summit/Modena Obsidian Site
Caliente Withdrawal	Park Range Aboriginal Site
Carbonari District	Pescio Cave
Cave Valley Cave Geologic Area	Pony Express Trail
Charcoal Ovens State Park	Pony Springs Withdrawal
Chief Mountain Trailhead	Pygmy Sage ACEC
Chisolm Mine Trilobite Site	Rainbow Canyon
Christmas Wash	Reed Cabin Summit
Cleve Creek	Rice Family Cemetery
Cold Creek Reservoir Recreation Area	Rose Guano Bat Cave ACEC
Condor Canyon ACEC	Rose Valley
Crystal Wash (Pahranagat)	Ruby Marsh Withdrawal
Comins Recreation Area	Sacramento Pass
Daub Site (Upper Meadow)	Sand Dune Site
Delamar	Sawmill Canyon
Egan Crest Trailhead	Shooting Gallery ACEC
Frenchy Lake (Pahranagat)	Shooting Range
Garrison Archaeology Site	Shoshone Ponds ACEC
Goshute Canyon ACEC	Six Mile Flat and Hiko
Goshute Cave Geologic Area	Snake Creek Indian Burial Cave ACEC
Goshute Lake	State Prison
Grapevine Canyon	Sunshine Locality Archaeological Site
Haypress Horse Preserve	Swamp Cedar ACEC
Hell's Half Acre (Pahranagat)	Tempiute Obsidian Source
Heusser Bristlecone ACEC	Toquop
Hendry's Creek/Rock Animal Corral ACEC	Tri-County Paleo Site
Honeymoon Hill/City of Rocks ACEC	Tunnel Canyon
Honor Camp	Ward Mining District ACEC
Illipah Reservoir	Ward Recreation Site
ake's Valley Paleo Shoreline	Weepah Spring
Kane Springs ACEC	White River Petroglyph Site
Lands identified for potential disposal in Lincoln County	Designated Wilderness
Lincoln Highway	Wilderness Study Areas
Lower Meadow Valley Wash ACEC	Wildlife Protective Withdrawals

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Mahoney Canyon Quarry
Mariah Site (Pahranagat)

Withdrawals around communities

Site-specific terms and conditions for mineral material sales under this alternative would be compiled from the complete list of Standard Terms and Conditions for Alternatives B, C, and E that are shown in Appendix L.

See **Table 2.5-15** for a summary of the distribution of acres for Alternative C.

Alternative D

Alternative D would exclude all new discretionary uses of the public lands including mineral disposals. Therefore, under this alternative the entire district would be closed to mineral material sales and disposals. Except for honoring existing contracts, new mineral disposals would not occur. This alternative may be considered extreme and impossible to implement due to legal constraints and the great demand for gravel. However, the alternative is included for purposes of impact comparison.

Alternative E

Alternative E would be the same as Alternative B, with the following exception:

- Approximately 7,843 acres in the Haypress allotment would be designated as "Closed" rather than "Open."

See **Table 2.5-15** for a summary of the distribution of acres for Alternative E.

Map 2.4-54 shows the location of areas that would be closed.

2.5.18.5 Monitoring of Geology and Mineral Extraction

Monitoring of mineral action disturbances would be done to ensure compliance with 43 Code of Federal Regulations 3100 (oil and gas leasing), 3200 (geothermal leasing), 3500 (solid mineral leasing), 3600 (mineral materials disposal), 3715 (mining occupancy), 3802 (mining, wilderness review), and 3809 (surface management) regulations. In general, emphasis would be on preventing "unnecessary or undue degradation" of public land in coordination with other federal and state agencies. Monitoring activities would consist of periodic field inspections of mineral disturbances.

Monitoring for leasable minerals would be done to ensure compliance with applicable laws and regulations, term and conditions of leases, standard practices and procedures for geophysical exploration, and conditions of approval for drilling and production operations. On producing leases, monitoring is intended to ensure an accurate accounting of material produced and protect the environment and public health and safety. Monitoring would include field inspection of leasable mineral activities as authorized under 40 Code of Federal Regulations 3161 and 3590.

Monitoring for locatable minerals would include periodic field inspections of mining and exploration operations. BLM policy establishes minimum inspection frequencies for mining operations as follows: quarterly inspections are required for all operations using cyanide, and biannual inspections for all other active operations. Operations in sensitive areas or operations with a high potential for greater than usual impacts would be inspected more often. Reclamation should be in accordance with the 43 Code of Federal Regulations 3809 regulations and BLM Handbook H3042-1 (BLM 1992). Any noncompliance items would be noted and resolved in accordance with 43 Code of Federal Regulations 3809 regulations.

Monitoring for salable minerals would be done to ensure compliance with applicable laws, regulations, BLM policy contained in BLM Manual Section 3600 and Handbook H-3600-1 (BLM 2002a,b), the 43 Code of Federal Regulations 3600 regulations, and the requirements of approved contracts and operation plans. An accurate accounting of material removed, reclamation, protection of the environment, public health and safety, and identification and resolution of salable mineral trespass issues would be ensured. Monitoring activities would include periodic field inspection of common use areas and other saleable mineral extraction operations. Operations in sensitive environmental areas or operations with a high potential for greater than usual impacts would be inspected more often and noncompliance items would be noted under procedures as directed by 43 Code of Federal Regulations 3600.

RMP Management Focus

The restoration and maintenance of healthy ecological systems within watersheds is a primary focus for the future management of the Ely District. Healthy ecological systems are geographically diverse and change over time. They are compatible with soil potential and are resilient to disturbance.

Resources and resource uses will be managed to restore or maintain ecological health. Certain resource management changes and active treatments may need to be implemented, in portions of watersheds, to accomplish this objective. Adaptive management will be pursued to avoid deteriorating conditions that favor invasive plants and catastrophic fires. Any projects will be implemented so as to result in a mosaic of vegetation within a watershed.

In the long term, natural disturbance (such as drought or fire) will occur and fewer treatments will be needed to maintain ecological health. The result will be a variety of vegetation phases, which will provide diverse, healthy conditions for future generations.

2.5.19 Watershed Management

Introduction

For planning and management purposes, the planning area has been divided into 61 watershed units (entire watersheds or manageable portions thereof). These watersheds receive precipitation and then lose it to the atmosphere by evaporation, transpiration, and sublimation. Watersheds convey water across the land surface through the shallow subsurface zone (soil mantle) and deeper groundwater aquifers. Watershed function is controlled by climate, geology, topography, vegetation, and soil characteristics. Vegetation and soil conditions change naturally over time in response to climate, fire, and other natural ecological processes. The rate water is captured by the watershed, the amount of storage available, and the rate and location of water release depends on the amount and type of vegetation and type and condition of soil.

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These parameters are affected by land management activities. Watersheds provide the environment to which species, populations, and communities have adapted. Watersheds provide the habitat formed by natural processes which support the distribution, diversity, and complexity of animal and plant species. Thus, healthy watersheds are the foundation of rangeland health objectives.

Desired Range of Conditions

Watersheds would display resiliency to disturbances and possess the necessary ecological components to achieve state water quality criteria, maintain ecological processes, and sustain appropriate uses. The desired range of conditions for specific vegetation types within the watersheds are discussed under Vegetation.

Goal

Manage watersheds to restore and maintain resistance and resiliency to disturbances.

Management Common to All Alternatives

1. To ensure maintenance of healthy watershed, watershed management would be implemented in accordance with 43 Code of Federal Regulations 4180 – Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration.
2. Under all alternatives, watersheds or portions of watersheds would be managed to restore and maintain resiliency to disturbance.
3. Watershed analysis procedures would be implemented in determining appropriate management and treatments for application in individual watersheds. The initial watersheds to be analyzed are: North Spring Valley, Antelope Valley, Gleason Creek, Smith Valley, South Steptoe Valley, Clover Creek South, North Antelope Valley, Steptoe A, and Spring Valley.

Prioritization of Watershed Analyses/Treatments. Under all alternatives, watersheds or portions of watersheds would be managed to restore and maintain resiliency to disturbances. Where management actions could have a watershed-scale effect, ecological system analysis at the watershed levels would be used. This would assure that potential actions are evaluated in light of the capabilities and limitations of specific watersheds. Information gained through analysis at this scale would be used in the adaptive management process and would support land management decisions and development of ecologically sustainable programs and projects (see Appendix D). This RMP/EIS provides management goals and direction for analysis at the watershed scale in terms of issues to be addressed and the desired range of conditions to be achieved through measurement.

Sixty-one watershed management units have been identified within the Ely District. The initial nine watersheds to be analyzed were selected on the basis of availability of monitoring data, wildland urban interfaces, and soil survey data. These include North Spring Valley, Antelope Valley, Gleason Creek, Smith Valley, South Steptoe Valley, Clover Creek South, North Antelope Valley, Steptoe A, and Spring Valley. The

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remaining 52 watersheds were prioritized into high and low priority categories (see Table 2.5-16) on the basis of several factors including availability of Natural Resource Conservation Service soils inventory data, risk criteria (e.g., special status species, flood risk, and noxious weeds), and management opportunities (e.g., herd management area management, allotment modifications, land disposal actions, and special designations).

Table 2.5-16
Watershed Priority for Analysis and Treatment

Watershed Name	Priority	Watershed Name	Priority
Clover Creek North	High	Cave Valley	Low
Dry Lake Valley	High	Central Little Smoky Valley	Low
Dry Valley	High	Coal Valley	Low
Duck Water	High	Coyote Springs	Low
Eagle Valley	High	Deep Creek	Low
Escalante Desert	High	Delamar Valley	Low
Huntington	High	Duck Creek Basin	Low
Lake Valley	High	Egan Basin	Low
Long Valley	High	Emmigrant	Low
Meadow Valley Wash North	High	Fox-gap Mountain	Low
Meadow Valley Wash South	High	Garden Valley	Low
Newark	High	Hamlin Valley	Low
Panaca Valley	High	akes Valley	Low
Patterson Wash	High	Kane Spring Wash	Low
Rose Valley	High	North Little Smoky Valley	Low
Snake Valley South	High	Park Range	Low
Spring Valley Southeast	High	Railroad Valley	Low
Spring Valley Southwest	High	Ruby Valley	Low
Steptoe B	High	Sand Hollow Wash	Low
Steptoe C	High	Sand Spring Valley	Low
White River Central	High	Snake Valley North	Low
White River North	High	South Little Smoky Valley	Low
White River South	High	South Spring Valley	Low
Beaver Dam Wash	Low	Tikaboo Valley	Low
Big Sand Springs Valley	Low	Toquop Wash	Low
Butte	Low	Tule Desert	Low

Watershed Analyses. As part of the watershed analysis process, areas within individual watersheds requiring treatment for restoration of ecological resilience would be mapped and appropriate treatment approaches would be identified. The approximate extent of each vegetation type for which treatment would be emphasized would be identified, based on the current knowledge of typical watersheds within the District. The BLM has further estimated the relative distribution of, and types of treatments applicable for, various vegetation types within typical large and small watersheds, which tend to differ substantially in terms of topographic setting, vegetation characteristics, and soils (see Section 3.19).

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General characteristics of typical large and small watersheds within the Great Basin and typical watersheds in the Mojave Desert are presented in **Tables 2.5-17, 2.5-18, and 2.5-19**, respectively. These tables were developed using available landscape-based data, professional knowledge gathered during years of field work doing soil inventory on the District, and available Order 3 soil survey data. These data include ecological status inventories and recent monitoring data. The watershed descriptions were developed to characterize the watersheds and their general physiography, soils, and vegetation relationships. To do this, the watersheds were partitioned by soils and their associated landforms into a cross-sectional approach that lends itself to a logical flow from lowest to highest. This was done to provide analysis without getting bogged down in details. Hence, the table rows present an ascending description of the watershed, its associated precipitation, elevation slope range, common vegetation, and the current general state or condition of the vegetation. Vegetation would change slightly to include some additional vegetative communities when watersheds occur in the transition area between the Mojave Desert and Great Basin, but would respond similarly.

Within these tables, the estimated percent of resilient vegetation is based on actual data collected from similar vegetative communities within various watersheds. The other columns provide a range of potential treatment sizes commensurate to the watershed size and reflecting the current condition; keeping in mind that, due to the dynamics of the vegetation, there also would need to be maintenance of the vegetation to retain its resiliency. Estimated acres maintained and restored in each watershed include those acres that are resilient and must have management treatments applied to maintain resiliency. The last column identifies a few of the possible treatment methods. This is not meant to be an inclusive list since the individual tools, or combinations thereof, that might be useful to maintain or restore an individual watershed only can be defined following the watershed analysis process. Because multiple options exist for treatment of any given area and final selection of treatment approaches within a watershed would not be made until the watershed analysis process is complete, it is currently impossible to predict the total area to be treated with a particular technique.

Management to Maintain Resiliency. Management tools to maintain resiliency of existing resilient vegetation communities and watersheds would include, but not be limited to, modifications of livestock grazing practices or complete elimination of livestock grazing, use of livestock to manage vegetation, fencing to restrict or exclude wild horse grazing, and modification of water developments to alter grazing patterns by livestock, wild horses, or wildlife (also see Appendix E, Tools and Techniques). In some situations with an understory of desirable perennial native species, changes in season or type of livestock grazing may be adequate to improve and maintain resiliency. Watershed treatments in the Mojave Desert would be limited in size to that necessary to gain a better understanding of resilience in these ecological systems and to protect these vegetation communities from degradation.

Treatments to Restore Resiliency. In situations currently considered to be non-resilient (i.e., lacking in desirable understory vegetation or dominated by invasive species), it may be necessary to implement active treatment measures to restore a resilient vegetation community. These measures may include mechanical

Table 2.5-17
 Characteristics of Typical Large Watersheds in the Great Basin¹

Watershed Characteristics				Reasonably Foreseeable Treatment				
	Dominant Vegetation	Slopes	Dominant Vegetative State	Percent of Watershed	Estimated Percent Resilient Vegetation	Estimated Acres to be Maintained and Restored in 100,000-acre Watershed	Estimated Acres to be Maintained and Restored in 800,000-acre Watershed	Typical Treatment Applications (Tools)
Soils On lake plain sediments or alluvial flats; precipitation 5 to 8 inches; elevation 5,500 to 6,000 feet.	Black greasewood, shadscale, sickle saltbush	0 to 2 percent	Shrubs are dominant	16 percent	70 percent (shadscale, sickle saltbush) invasive annuals present in many areas.	4,800	38,000	Herbicide, mechanical and seeding
On recent water-laid sediments; precipitation 8 to 10 inches; elevation 6,000 to 6,400 feet.	Basin and Wyoming big sagebrush, winterfat, shadscale communities	2 to 4 percent	Basin and Wyoming sagebrush at threshold: Approximately 30 percent shrubs and trees, 13 percent herbaceous (grass and forbs).	18 percent	25 percent in sagebrush communities, invasive annuals present in many areas.	9,000	72,000	Herbicide, mechanical and seeding
On older water-laid sediments; precipitation 8 to 10 inches; elevation 6,000 to 6,400 feet.	Black sagebrush and Wyoming big sagebrush, winterfat	4 to 8 percent	Black sagebrush at threshold: Approximately 60 percent shrubs and trees, 30 percent herbaceous (grass and forbs).	22 percent	30 percent for black sagebrush; 25 percent for Wyoming sagebrush	11,000	88,000	Mechanical and seeding
On older water-laid sediments and low hills; precipitation 10 to 12 inches; elevation 6,400 to 7,000 feet.	black sagebrush and Wyoming big sagebrush	4 to 15 percent	Black sagebrush at threshold: Approximately 60 percent shrubs and trees, 30 percent herbaceous (grass and forbs).	20 percent	30 percent for black sagebrush, 25 percent for Wyoming sagebrush	10,000	80,000	Mechanical, herbicide, prescribed burn and seeding
	Pinyon and/or Utah Juniper		Pinyon-juniper is in a mature (resilient) to over-mature state (not resilient).	2 percent	11 percent	1,000	8,000	Mechanical, herbicide, prescribed burn and seeding
On low mountain slopes; precipitation 12 to 14 inches.	Black sagebrush, mountain big sagebrush, low sagebrush	15 to 50 percent	Sagebrush is in the herbaceous state.	5 percent	40 percent	2,500	20,000	Mechanical, herbicide, and prescribed burn

Table 2.5-17 (Continued)

Watershed Characteristics					Reasonably Foreseeable Treatment			
Soils	Dominant Vegetation	Slopes	Dominant Vegetative State	Percent of Watershed	Estimated Percent Resilient Vegetation	Estimated Acres to be Maintained and Restored in 100,000-acre Watershed	Estimated Acres to be Maintained and Restored in 800,000-acre Watershed	Typical Treatment Applications (Tools)
elevation 7,000 to 8,200	Pinyon and/or Utah juniper		Pinyon-juniper is in a mature (resilient) to over-mature state (not resilient).	10 percent	11 percent	5,000	40,000	Mechanical, herbicide prescribed burn and seeding
On high mountain slopes; precipitation 14 to 16 inches; elevation 8,200 to 10,500	Big sage, low sagebrush, black sagebrush, curl leaf mountain Mahogany	30 to 75 percent	Sagebrush sites are in a herbaceous state.	5 percent	40 percent of the sagebrush	2,500	20,000	Prescribed burn and managed natural wildfire
	Mixed conifers, aspen stand (less than 1 percent)		Mixed conifer, are over mature.	2 percent	25 percent mixed conifer; 25 percent aspen stands	1,000	8,000	Prescribed burn, managed natural wildfire, and mechanical

¹Typical large watersheds in the Great Basin range from 100,000 to 800,000 acres in size.

Table 2.5-18
Characteristics of Typical Small Watersheds in the Great Basin¹

Watershed Characteristics					Reasonably Foreseeable Treatment			
	Dominant Vegetation	Slopes	Dominant Vegetative State	Percent of Watershed	Estimated Percent Resilient Vegetation	Estimated Acres Maintained and Restored 10,000	Estimated Acres Maintained and Restored 100,000	Typical Treatment Applications (Tools) Restoration
Soils	Basin and Wyoming big sagebrush, winterfat	2 to 4 percent	Basin and Wyoming big sagebrush at threshold: Approximately 30 percent shrubs and trees, 13 percent herbaceous (grass and forbs) invasive species.	4 percent	25 percent in sagebrush communities, invasive annuals present in many areas.	400	4,000	Herbicide, mechanical and seeding
	Black sagebrush and Wyoming big sagebrush, winterfat	4 to 8 percent	Black sagebrush at threshold: Approximately 60 percent shrubs and trees, 30 percent herbaceous (grass and forbs).	17 percent	30 percent for black sagebrush, 25 percent for Wyoming sagebrush, invasive annuals present in many areas.	850	8,500	Herbicide, mechanical and seeding
On older water-laid sediments and low hills, precipitation 10 to 12 inches, elevation 6,400 to 7,000 feet.	Black sagebrush and Wyoming big sagebrush	4 to 15 percent	Black sagebrush at threshold: Approximately 60 percent shrubs and trees, 30 percent herbaceous (grass & forbs).	12 percent	30 percent for black sagebrush, 25 percent for Wyoming sagebrush	600	6,000	Mechanical, herbicide, prescribed burn, and seeding
	Pinyon and/or Utah juniper	15 to 50 percent	Pinyon-juniper is in a mature (resilient) to over-mature state (not resilient).	23 percent	11 percent	1,150	11,500	Mechanical, herbicide, prescribed burn, and seeding
On low mountain slopes, precipitation 12 to 14 inches, elevation 7,000 to 8,200	Black sagebrush, mountain big sagebrush, low sagebrush	15 to 50 percent	Sagebrush is in the herbaceous state.	30 percent	40 percent	1,500	15,000	Mechanical, herbicide, prescribed burn, and seeding
	Pinyon and/or Utah juniper		Pinyon-juniper is in a mature (resilient) to over-mature state (not resilient).	12 percent	11 percent	600	6,000	Mechanical, herbicide, prescribed burn, and seeding
On high mountain slopes, precipitation 14 to 16 inches, elevation 8,200 to 10,500	Mountain big sage, low sagebrush, black sagebrush, curl leaf mountain mahogany	30 to 75 percent	Sagebrush sites are in a herbaceous state.	1 percent	40 percent	50	500	Prescribed burn and managed natural wildfire
	Mixed conifers, aspen stands (less than 1 percent)		Mixed conifer is in the mature and over mature states.	1 percent	25 percent mixed conifer; 25 percent aspen stands	50	500	Prescribed burn, managed natural wildfire, and mechanical

¹Typical small watersheds in the Great Basin range from 10,000 to 100,000 acres in size.

Table 2.5-19
Characteristics of Typical Watersheds in the Mojave Desert¹

Watershed Characteristics				Reasonably Foreseeable Treatment		
Soils	Dominant Vegetation	Slopes	Dominant Vegetative State	Percent of Watershed	Estimated Percent Resilient Vegetation	Typical Treatment Applications (Tools) Maintenance and Restoration
Fan remnant, precipitation 3 to 5 inches, elevation 1,750 to 2,500	Creosotebush, big galleta, white bursage	2 to 4 percent	Not known, data gap	15 percent	Not known, data gap	Maintenance and restoration through procedures identified in Biological Opinion and restoration plan for Desert tortoise.
Water laid sediment, fan remnant, precipitation 3 to 5 inches, elevation 2,500 to 3,000	Blackbrush, big galleta, white bursage	4 to 8 percent	Not known, data gap	35 percent	Not known, data gap	Maintenance of tortoise habitat, monitoring/inventory would identify acreage. Emergency rehabilitation on wild fire activity
Water laid sediment, fan remnant, precipitation 5 to 7 inches, elevation 3,000 to 3,500	Blackbrush, Indian ricegrass, big galleta, white bursage	8 to 15 percent	Not known, data gap	15 percent	Not known, data gap	Same
Residual shallow soils on bedrock, precipitation 5 to 7 inches, elevation 3,500 to 4,200	Blackbrush, Indian ricegrass, big galleta	30 to 50 percent	Not known, data gap	35 percent	Not known, data gap	Same

¹Typical watersheds in the Mojave Desert range from 45,000 to 330,000 acres in size.

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treatment (chaining, plowing, tree-cutting, etc.), prescribed grazing treatments and practices, chemical treatment (application of selected herbicides), prescribed burning, and seeding (also see Appendix E, Tools and Techniques). Appropriate treatments would be identified following the watershed analysis process for specific watershed situations and would be subject to further NEPA review at that time.

2.5.19.1 Parameter – Allocation of Additional Forage as a Result of Restoration Actions

Additional forage produced as a result of watershed restoration actions would be allocated in the following manner by individual alternatives:

Alternative A

Following watershed analysis and assessment of rangeland health, additional forage would be allocated 70 percent to livestock and wild horses and 30 percent to wildlife in the Schell Resource Area. Additional forage would be allocated proportionately among all users in the rest of the District.

Alternative B

Following watershed analysis and assessment of rangeland health, additional forage would be allocated for watershed maintenance and wildlife.

Alternative C

Following watershed analysis and assessment of rangeland health, additional forage would be allocated to livestock.

Alternative D

After Standards for Rangeland Health have been met at the watershed level, additional forage would be allocated for watershed maintenance, wildlife, and wild horses within herd management areas. Outside herd management areas, the additional forage would be allocated for watershed maintenance and wildlife. No forage would be allocated to livestock.

Alternative E

After Standards for Rangeland Health have been met at the watershed level, additional forage would be allocated in a balanced approach for watershed maintenance, wildlife, livestock, and wild horses.

2.5.19.2 Monitoring of Watersheds

Most parameters essential for evaluating watershed health (e.g., vegetation cover, species composition and community structure, erosion features, resistance to disturbance, etc.) would be monitored in conjunction

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with other resource programs such as vegetation. The allocation of additional forage produced would be based on utilization levels of available forage and meeting resource objectives.

2.5.20 Fire Management

Introduction

The Review Update of the 1995 Federal Wildland Fire Management Policy and Program Review" (<http://www.nifc.gov/firepolicy/index.htm>) recognizes fire's essential role as an ecological process. The BLM is charged with clearly defining fire management goals, objectives, and actions in comprehensive fire management plans, which are tiered to this RMP. Future fire management plans would include identification of areas for wildland fire use and prescribed fire. Strategic watershed-scale fuel management and fire use planning, integrating a variety of treatment methods, would cost-effectively reduce fuel hazards to acceptable levels and benefit ecological system health. Fire management programs and activities should be based upon safety to fire fighters and the public, protecting resources, minimizing costs, and achieving land management objectives. They also must be economically viable. Fire can be used to restore and sustain ecosystem health based on sound scientific principles and information. This also must be balanced with other societal goals, including public health and safety, air quality, and other specific environmental concerns. Sound risk management is a foundation for all fire management activities. Risks and uncertainties relating to fire management activities must be understood, analyzed, communicated, and managed as they relate to the cost or consequences of either doing or not doing an activity.

Desired Range of Conditions

Alternatives A, B, C, and E – Wildland and prescribed fires would be managed by the Ely Field Office as tools in the manipulation and treatment of vegetation communities and watersheds to achieve the desired range of condition for vegetation, watersheds, and other resource programs (e.g., livestock, wild horses, soils, etc.), including reduced dominance of invasive woody species in some vegetation types and eradication of selected noxious and invasive weeds that can be controlled through fire.

Alternative D – Wildland fire would occur on the Ely District regardless of watershed health and post-fire effects with minimal suppression except for human-caused fires and those that threaten life or property. Prescribed fire may be used on a case-by-case basis to help achieve various mandated requirements such as those related to threatened or endangered species.

Goal

Provide an appropriate management response to all wildland fires, with emphasis on firefighter and public safety, consistent with overall management objectives.

Management Common to All Alternatives

Prescribed fire and wildland fire use would comply with applicable smoke management requirements as specified by the Nevada Smoke Management program, including obtaining annual permits and daily evaluation of the fire conditions, to ensure applicable air quality regulations are not violated.

2.5.20.1 Parameter – Fire Management**Alternative A**

The Ely District would continue to implement the current fire management plan, which includes areas where fires would be beneficial and where they may have negative effects. The Ely District fire management plan would be revised/updated periodically on a fire management unit basis. These revisions would tier to the general fire management direction in this resource management plan, and prescribe the appropriate management response. Currently the plan identifies areas where fires would have negative effects, where fires would be beneficial after vegetation treatments to increase resiliency, and where fires are beneficial. Management actions would continue to include full suppression, suppression of certain areas on the fire, directing fire away from other sensitive areas, and monitoring with no suppression. A combination of all management actions could be used on a fire incident. The plan also identifies conditions and potential locations for wildland fire use and for prescribed fires.

The Ely District is classified into general fire management categories based on current fuel types, distributions, and amounts. Seventy-five percent of the District generally is unsuitable for restoring natural wildfire at the present time and is classified as full suppression areas. Approximately 726,000 acres that are managed as full suppression occur within desert tortoise habitat in the southern portions of the District. Approximately 3.2 million acres currently are managed for fire use. Some areas have constraints, such as fire size, to conserve wildlife habitat features (Table 2.5-20 and Map 2.5-2) (BLM 2000c).

**Table 2.5-20
Maximum Allowable Burn Area within Constraint Zones**

Maximum Allowable Burn Area (acres)	Total Constraint Zone Area (acres)
Full Suppression	10,326,100
300	133,700
500	136,900
1,000	74,700
1,500	555,100
2,500	158,000
Few Constraints	2,171,100
Total (includes other federal and private lands)	13,555,600

Appropriate management response is applied to all wildland fire incidents occurring on the District. The Wildland Fire Management Policy (U.S. Department of the Interior et al. 2001), and more specifically, the

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Ely District Managed Natural and Prescribed Fire Plan provides for a full range of responses and for the opportunity for all wildland fires to be managed for resource benefits. Appropriate management responses are based on land management objectives, relative risk, complexity, and defensibility of fire management boundaries and are continually updated as conditions change.

When selecting an appropriate management response, firefighter and public safety is always the highest concern. Minimum impact suppression tactics are used on all District wildfires in order to incur the least possible impact to the land while achieving fire management objectives. Minimum impact techniques might include using existing roads for fire breaks rather than building new lines or watching dying fires rather than disturbing them during "hop-up" operations. However, mechanized equipment also may be used on fire management actions and deemed as the minimum tool based on safety or values at risk.

Alternative B

The newly revised Ely Fire Management Plan (2004a) would be implemented. This plan identifies 25 fire management units within the District on the basis of similar vegetation type and condition, management constraints, issues, and objectives and strategies (see **Map 2.5-3** and **Table 2.5-21**). For each fire management unit, management recommendations are provided for the following fire management programs: wildland fire suppression, fuels treatment (prescribed fire and non-fire fuels), emergency stabilization and rehabilitation, and community assistance/protection.

Each fire management unit is assigned a classification or type, in order to clearly define its primary resource management objective and fire protection values. The general classification of fire management unit category types is listed as follows:

- Wildland Urban Interface (WUI)*
- Special Management Areas (SMA)*
- High Value Habitat (HVH)*
- Cultural/Historic/Paleontological (CHP)*
- Vegetation (VEG)*
- Wilderness (WLD) and Wilderness Study Areas (WSA)*

Each fire management unit is a specific land management area defined by fire management objectives, management constraints, topographic features, access, values to be protected, political boundaries, fuel types, and major fire regime groups. Each of the individual fire management units are somewhat unique, as evidenced by strategies, objectives, and value attributes that set it apart from the management characteristics of an adjacent unit.

Table 2.5-21
Summary of Fire Management Units for the Ely Field Office

Number	Name	Type
NV-040-01	Meadow Valley-Deerlodge	VEG
NV-040-02	Irish/Timber/Worthington Mts	VEG
NV-040-03	Northern Mountains	VEG
NV-040-04	Southern Benches--VEG	VEG
NV-040-05	Seaman Range-Murphy gap	VEG
NV-040-06	Elgin/Blue Nose/Kane Spring PJ	VEG
NV-040-07	Southern Valleys	VEG
NV-040-08	Northern Valleys	VEG
NV-040-09	Lincoln County WUI	WUI
NV-040-10	Ely/Lund/Duckwater WUI	WUI
NV-040-11	Cherry Creek/Goshute WUI	WUI
NV-040-12	Ely/Lund Watershed &WUI	WUI
NV-040-13	Caliente Watershed &WUI	WUI
NV-040-14	Southern Benches HVH	HVH
NV-040-15	Northern Benches	HVH
NV-040-16	Buck &Bald/Diamond Mtns.	HVH
NV-040-17	North Pahroc &Pahranagat	HVH
NV-040-18	Bullwhack	HVH
NV-040-19	Illipah/Wells Stn./HorseQuinn	HVH
NV-040-20	Clover/Delamar/S. Pahroc/Irish	HVH
NV-040-21	Highlands and South Egan Range	HVH
NV-040-22	Kern/Snake/Cherry Crk/Park Mtn.	HVH
NV-040-23	Mojave	SMA
NV-040-24	Mojave and Highlands SMA	SMA
NV-040-25	Alamo and Hiko WUI	WUI

As watershed analyses are completed and projects are implemented to increase native vegetation resilience to fire, this plan would be implemented and fire use would be implemented to the greatest extent possible. Management actions would include a full range of options from full suppression of wildland fires in some situations to limited or no suppression on others, depending on the circumstances and potential resources involved. The fire management plan would, however, provide full protection of areas involving risk to human life, developed property, or irreplaceable ecological or cultural resources. In other areas, fire suppression options for wildland fires would be selected after consideration of how fire fits into the overall vegetation management objectives for a given watershed or landscape area. Fire would be one of the key tools involved in vegetation treatments and would be used to the greatest extent possible as an efficient means for altering vegetation communities to achieve a healthy range of vegetation conditions.

Alternative C

Where and to the extent possible, all wildland fires would be suppressed and fire would be used in limited situations as a management tool for vegetation treatments.

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Alternative D

A new fire management plan would be developed with emphasis on no suppression of wildland fires except for human-caused and those that threaten life and/or property. Thus, fires resulting from natural ignition sources would be monitored and allowed to burn with minimal suppression activity until they are extinguished by natural events (e.g., precipitation) or by reaching existing barriers (e.g., roads, ridge tops, water bodies, and major changes in vegetation type). Unlike Alternative B where fire use would be expanded as resilience is brought back into the watershed, this alternative would not take resilience and post fire effects into consideration during the management of wildland fires. Because this alternative involves very limited vegetation treatments to restore resilience to the vegetation communities, prescribed fire would not be used as a major tool for vegetation management.

Alternative E

Same as Alternative B.

2.5.20.2 Monitoring of Fire

Monitoring would determine whether suppression strategies, practices, and activities are meeting resource management objectives, concerns, and land health standards. Pre-fire condition and post-fire effects would be determined by monitoring plant community composition and trend in burn areas to determine natural recovery, responses from seed planting, and weed and cheatgrass expansion. Monitoring methods may include photo points, density, cover, frequency plots (pre- and post-burn), fire regime condition class (degree of departure from natural regime), and ocular estimates. FIREMON, a fire effects monitoring and inventory protocol, is being field tested in the sagebrush steppe vegetation types. This testing is expected to result in the development of an Interagency Fire Effects Monitoring Handbook that would be used in the future.

2.5.21 Noxious and Invasive Weed Management

Introduction

Federal Land Policy and Management Act of 1976 and Pesticide Registration Improvement Act of 2003 direct BLM to "... manage public lands according to the principles of multiple-use and sustained yield ..." and "... manage the public lands to prevent unnecessary degradation ... so they become as productive as feasible." The introduction and spread of invasive and nonnative plant species including noxious weeds within the District contributes to the loss of rangeland productivity, increased soil erosion, reduced species and structural diversity, loss of wildlife habitat, and in some instances may pose a threat to human health and welfare. The Carlson-Foley Act (Public Law 90-583) and the Federal Noxious Weed Act (Public Law 93-629) direct weed control on public land. Executive Order 13112, Invasive Species, was authorized to prevent the introduction of invasive species, provide for their control, and to minimize the economic, ecological, and human health impacts caused by these species. Nevada Revised Statute 555, Control of Insects, Pests, and Noxious Weeds, provides information regarding the designation and eradication of and inspection for noxious weeds within the state of Nevada. Protection of natural resource values depends on

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educating people about the negative impacts of weeds and what actions, agencies, and individuals can take to prevent weeds from becoming established.

Desired Range of Conditions

The areal extent of existing noxious and invasive weed populations would be reduced and the spread of these populations and the introduction and establishment of new species would be prevented.

Goal

Prevent the introduction and spread of noxious and invasive weeds. Control or eradicate existing populations.

Management Common to All Alternatives

Most components of this program are prescribed by law or policy and are common to all alternatives.

1. Those weed species designated as "noxious" by the Nevada Administrative Code would be addressed in this program. In addition, cheatgrass and halogeton would be treated as "invasive" species.
2. The Partners Against Weeds program would be implemented. Partners Against Weeds is a BLM program adopted in 1996 that states six broad goals of BLM weed programs. These goals include: 1) prevention and detection; 2) education and awareness; 3) inventory; 4) planning; 5) coordination; and 6) monitoring, evaluation, research, and technology transfer.
3. The Ely Field Office Noxious Weeds Prevention Schedule would be enforced. The Ely Field Office Noxious Weed Prevention Schedule is a list of best management practices that serves as a blueprint to minimize the spread of weeds within the Ely District. It contains generally applicable best management practices as well as those that are specific to each division and program area.

2.5.21.1 Parameter – Invasive and Nonnative Plant Species Management

Alternative A

Under this alternative, integrated weed management would continue to be used to treat weed infestations. Principles of integrated pest management would be used to meet management objectives and to reestablish resistant and resilient native understory vegetation communities. The Ely Field Office would support cooperative agreements for the purposes of invasive and noxious plant management with local and state governments, with other federal agencies, and with cooperative weed management areas. All mechanical, cultural, biological, and chemical tools that are authorized for use on public lands would be allowed (see Appendix E).

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The potential for weed spread and establishment as an environmental consequence of all proposed actions would be considered and measures to minimize or avoid increases in weeds would be included in the agency preferred alternative. Weed management plans that address weed vectors, minimize the movement of weeds within public lands, consider disturbance regimes, and address existing weed infestations would be developed.

Alternative B

Same as Alternative A.

Alternative C

Same as Alternative A.

Alternative D

Same as Alternative A except sulfonyleurea herbicides and other acetolactate synthesis-inhibiting herbicides would not be allowed. Herbicides with documented adverse effects on fish, amphibians, and other aquatic species (e.g., atrazine) would not be allowed.

Alternative E

Same as Alternative A.

2.5.21.2 Monitoring of Noxious and Invasive Weeds

Evaluation of treatments would continue in cooperation with the State of Nevada, counties, and private interests as well as neighboring counties and federal jurisdictions. Inventories to identify new introductions, distribution, and density of noxious weed populations would be carried out on an annual basis in cooperation with these entities. Known noxious weed sites which are identified for treatment would be visited each year and evaluated for effectiveness of control. Known sites not identified for treatment would be visited as funding within the District becomes available. All known sites visited would be located with a global positioning system unit (or other suitable technology), measured, and a determination of the need for future treatment would be made. Inventories for new noxious weeds would be conducted within the District as funding becomes available. All burned areas (natural and prescribed) would be surveyed for noxious weeds following the burn as funding becomes available. Any newly discovered sites would be located with a global positioning system unit, measured, and a determination of the need for future treatment would be made. Ecological trends due to changes in vegetation composition over time, in areas dominated by competing undesirable plant species, would be measured through periodic rangeland health assessments following procedures outlined in "Interpreting Indicators of Rangeland Health" (Pellant et al. 2000).

2.5.22 Special Designations**Introduction**

Section 202(c)(3) of Federal Land Policy and Management Act mandates that priority be given to the designation and protection of ACECs. These areas are defined in section 103(a) as areas where special management attention is required to protect and prevent irreparable damage to important values, resources, systems or processes, or to protect life and safety from natural hazards. Appendix Q contains a detailed description of each existing and proposed ACEC.

Desired Range of Conditions

Multiple use activities within the District would be consistent with the management plans that are developed for the special designation areas, such as ACECs.

Goal

Evaluate areas of interest for special designation and appropriately manage those areas that meet necessary requirements.

2.5.22.1 Parameter – Areas of Critical Environmental Concern**Management Common to All Alternatives**

1. Special Designation Areas including ACECs may occur in Wilderness Study Areas.
2. All special designation areas would be subject to valid existing rights.

The Federal Land Policy and Management Act of 1976 states that priority should be given to the designation and protection of ACECs when developing land use plans. A potential ACEC is designated in the approved RMP if it requires special management to protect its relevant and important values. Management is considered special if it is outside of the ordinary or routine requirements of the BLM or if it is not covered by provisions already stipulated in the RMP. Special management is unique to the area and includes terms and conditions specifically designed to protect the values in the ACEC (BLM 2000d). A further description of the ACECs and the selection process as it applies to this RMP is presented in Section 3.22 and Appendix Q.

In the Ely RMP process, 127 nominations, which were condensed into 100 nominated areas, were reviewed, including three existing ACECs. In order to qualify as potential ACECs, nominated areas must meet the relevance and importance criteria established in regulation and in BLM guidance. Seventy-seven of the areas initially were found to meet the criteria as potential ACECs. The BLM reviewed these 77 potential ACECs to determine whether special management measures were required to protect their relevant and important values. It was determined that relevant and important values were protected by actions in all alternatives in 54 of these areas and the ACEC designation is not needed (see **Tables 2.5-22**

2.0 ALTERNATIVES

and **Q-1** in Appendix Q). The BLM has determined that 23 of the initially identified 100 potential ACECs, including the three existing ACECs, meet the above-stated requirements for potential designation. A summary of the selection process also is presented in Appendix Q.

Alternative A

Retain the three current ACECs for a total of 212,500 acres (see **Map 2.4-55** and Appendix Q).

Alternative B

Retain the three current ACECs for a total of 212,500 acres. Designate 18 new ACECs totaling an additional 147,400 acres (see **Map 2.4-55** and Appendix Q).

Alternative C

Retain the three current ACECs for a total of 212,500 acres. Designate 20 new ACECs totaling an additional 142,800 acres (see **Map 2.4-55** and Appendix Q).

Alternative D

Designate no new ACECs and remove ACEC designation from the three existing ACECs.

Alternative E

Retain the three current ACECs for a total of 212,500 acres. Designate 18 new ACECs totaling an additional 138,900 acres (see **Map 2.4-55** and Appendix Q).

Map 2.4-54 shows the locations of all 23 potential ACECs. Detailed locations and boundaries are shown individually for each of the 23 potential ACECs.

Table 2.5-22 summarizes the designation of ACECs by alternatives. Management activities are described below and summarized in **Table 2.5-23** for each of the three existing ACECs and 20 potential ACECs. Supplemental information regarding the management direction for the three existing ACECs and each of the 20 potential ACECs under each alternative is presented following **Table 2.5-23**. Further descriptions of the potential ACECs can be found in Section 3.22 and Appendix Q.

Existing ACECs: Kane Springs, Beaver Dam Slope, and Mormon Mesa

Alternative A

The Kane Springs, Mormon Mesa, and Beaver Dam Slope ACECs were previously established and currently exist as Alternative A for the RMP. This designation would continue under all alternatives, except Alternative D, but management prescriptions would remain the same. These ACECs were designated through the Approved Caliente MFP Amendment and Record of Decision for the Management of Desert Tortoise Habitat (BLM 2000b) and corresponding Biological Opinion (U.S. Fish and Wildlife Service 2000).

Table 2.5-22
Consideration by Alternative of Nominated ACECs that Meet Relevance and Importance

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
ROCK ART							
Alamo Pictograph Site	480 acres	Rock art	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to this relatively unknown area, which could result in damage to the resource. Detailed management actions designed to protect rock art are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Ash Springs Rock Art	160 acres	Rock art	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. Detailed management actions designed to protect rock art are part of Alternatives B, C, D, and E and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Black Canyon Rock Art	400 acres	Rock art	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to this relatively unknown area, which could result in damage to the resource. Detailed management actions designed to protect rock art are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Christmas Wash Rock Art	1,920 acres	Rock art	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to this relatively unknown area, which could result in damage to the resource. Detailed management actions designed to protect rock art are part of these alternatives and provide sufficient protection for the relevant and important values. This area currently is protected by its location within a designated wilderness area, which limits access. The wilderness management plan for this area will address cultural values. Further, under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				

2.0 ALTERNATIVES

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Crystal Wash Rock Art	1,440 acres	Rock art	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. Detailed management actions designed to protect rock art are part of Alternatives B, C, D, and E and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.							
Evergreen Flat Rock Art	960 acres	Rock art	0 acres	0 acres	0 acres	0 acres	0 acres
Rock art resources are and would be protected because of their location within the existing Kane Springs ACEC, which is recommended to be retained as an ACEC in Alternatives A, B, C, and E. The Kane Springs ACEC Management Plan would address rock art resources. Detailed management actions designed to protect rock art are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, no ACEC designation for rock art is proposed because unwanted public attention to this relatively unknown area could result in damage to the resource.							
Frenchy Lake Rock Art	220 acres	Rock art	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to this relatively unknown area, which could result in damage to the resource. Detailed management actions designed to protect rock art are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.							
Hell's Half Acre Rock Art	320 acres	Rock art	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to this relatively unknown area, which could result in damage to the resource. Detailed management actions designed to protect rock art are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.							
Hiko Canyon Rock Art	15 acres	Rock art	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to this relatively unknown area, which could result in damage to the resource. Detailed management actions designed to protect rock art are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.							

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Honeymoon Hill/City of Rocks	3,900 to 5,900 acres	Rock art (see Appendix Q for a complete description)	0 acres	3,900 acres	5,900 acres	0 acres	3,900 acres
Under Alternative A, this is not an existing ACEC. Special management attention is required for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Alternative C proposes the largest ACEC in order to protect the cultural values within this commodity-oriented alternative. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	26,200 acres	26,200 acres	0 acres	26,200 acres
Moriah Site Rock Art	640 acres	Rock art	Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to this relatively unknown area, which could result in damage to the resource. Detailed management actions designed to protect rock art are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Mount Irish Rock Art	26,200 acres	Rock art (see Appendix Q for a complete description)	0 acres	0 acres	0 acres	0 acres	0 acres
This potential ACEC includes the Irish Archeological District. Under Alternative A, this is not an existing ACEC. Even though 15 percent of the nominated area lies within designated wilderness, special management attention is required for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). The wilderness management plan for this area will address cultural values within the wilderness area. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	0 acres	0 acres	0 acres	0 acres
Negro Creek Rock Art	560 acres	Rock art	Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to this relatively unknown area, which could result in damage to the resource. Detailed management actions designed to protect rock art are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				

2.0 ALTERNATIVES

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Pahroc Rock Art	3,200 acres	Rock art (see Appendix Q for a complete description)	0 acres	3,200 acres	3,200 acres	0 acres	3,200 acres
			Under Alternative A, this is not an existing ACEC. Even though 30 percent of the nominated area lies within designated wilderness, the rock art location is not within the designated wilderness; therefore, special management attention is required for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). The wilderness management plan for this area would address additional cultural values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Six Mile Flat Rock Art	2,160 acres	Rock art	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to this relatively unknown area, which could result in damage to the resource. Detailed management actions designed to protect rock art are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Shooting Gallery	20,700 acres	Rock art (see Appendix Q for a complete description)	0 acres	20,700 acres	20,700 acres	0 acres	20,700 acres
			Under Alternative A, this is not an existing ACEC. Special management attention is required for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Tunnel Canyon	200 acres	Fremont Pictographs	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to this relatively unknown area, which could result in damage to the resource. Detailed management actions designed to protect rock art are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Weepah Spring	5,120 acres	Rock art	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to this relatively unknown area, which could result in damage to the resource. Detailed management actions designed to protect rock art are part of these alternatives and provide sufficient protection for the relevant and important values. This area currently is protected by its location within a designated wilderness area which limits access. The wilderness management plan for this area would address rock art resources. Further, under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
White River Narrows	8,960 acres	Rock art	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. Detailed management actions designed to protect rock within this national register district are part of Alternatives B, C, D, and E and would provide sufficient protection for the relevant important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
OTHER CULTURAL RESOURCES							
Baker Archeological Site	80 acres	Fremont Habitation Site (see Appendix Q for a complete description)	0 acres	80 acres	80 acres	0 acres	80 acres
			Under Alternative A this is not an existing ACEC. Special management attention is required for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Bennett Springs	520 acres	Historic landscape	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to this relatively unknown area, which could result in damage to the resource. Detailed management actions designed to protect historic trails are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management. A higher visual resource management class is being assigned to this area through this RMP to protect the landscape under Alternatives B, C, D, and E.				

2.0 ALTERNATIVES

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Bristol Wells	400 acres	Historic mining town and cemetery	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. Criteria for protection of historic mining towns and cemeteries in Alternatives B, C, D, and E provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	0 acres	0 acres	0 acres	0 acres
Carbonari Sites	21,279	Scattered charcoal production site	Under Alternative A, these are not existing ACECs. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to these relatively unknown areas, which could result in damage to the resource. Detailed management actions designed to protect historic mining are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Delamar	4,160 acres	Historic mining town	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. Criteria for protection of historic mining towns and cemeteries in Alternatives B, C, D, and E and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	0 acres	0 acres	0 acres	0 acres
Garrison Archeological Site	160 acres	Fremont Village	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call more unwanted public attention to this known site, which could result in damage to the resource. Detailed management actions designed to protect formative Puebloan sites are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	0 acres	0 acres	0 acres	0 acres

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Gleason Canyon and Panaca Charcoal Kilns	4,000 acres	Charcoal kilns	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. A recreation project plan to be written under Alternatives B, C, D, and E would address these values and preclude the need for special management through an ACEC. Detailed management actions designed to protect historic mining are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Goshute Lake	18,360 acres	Paleo-Indian site	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to these relatively unknown areas, which could result in damage to the resource. Detailed management actions designed to protect Paleo-Indian sites are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Hendry's Creek/Rock Animal Corral	3,300 acres	Archeological site (see Appendix Q for a complete description)	0 acres	3,300 acres	3,300 acres	0 acres	3,300 acres
			Under Alternative A, this is not an existing ACEC. Special management attention is required for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Jake's Valley Paleo Shoreline	19,209 acres	Paleo-Indian site	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call more unwanted public attention to this known site, which could result in damage to the resource. Detailed management actions designed to protect Paleo-Indian sites are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Mahoney Canyon Jasperoid Source	200 acres	Tool stone quarry	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call more unwanted public attention to this known site, which could result in damage to the resource. Detailed management actions designed to protect tool-stone sources or quarries are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	0 acres	0 acres	0 acres	0 acres
Modena Obsidian Source	13,260 acres	Obsidian source	Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call more unwanted public attention to this known site, which could result in damage to the resource. Detailed management actions designed to protect tool-stone sources or quarries are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Mormon Peak Caves, Mormon Mountains, and Mormon Peak	123,000 acres	Extensive cultural resources	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to this relatively unknown area, which could result in damage to the resource. Detailed management actions designed to protect rock art, rockshelters, and cave sites are part of these alternatives and provide sufficient protection for the relevant and important values. The cultural values are currently protected by their location within a designated wilderness area which limits access. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	14,600 acres	14,600 acres	0 acres	14,600 acres
Osceola and Osceola Ditch	14,600 acres	Historic town and ditch (see Appendix Q for a complete description)	0 acres	14,600 acres	14,600 acres	0 acres	14,600 acres
Under Alternative A, this is not an existing ACEC. Special management attention is required for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	14,600 acres	14,600 acres	0 acres	14,600 acres

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs			
			Alternative A 0 acres	Alternative B 0 acres	Alternative C 0 acres	Alternative E 0 acres
Park Range Aboriginal Sites	42,154 acres	High altitude aboriginal sites	Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to this relatively unknown area, which could result in damage to the resource. Detailed management actions designed to protect prehistoric complex are part of these alternatives and provide sufficient protection for the relevant and important values. Currently this area is protected by its location within a designated Wilderness Study Area and physical access is extremely difficult. Both of these reasons limit access to the area. Further, under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			
Rose Guano Bat Cave	40 acres	Historic Guano Mine and Cave (see Appendix Q for a complete description)	0 acres	40 acres	40 acres	40 acres
			Under Alternative A, this is not an existing ACEC. Special management attention is required for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			
Sawmill Canyon	9,920 acres	Historic timber operations and rock art	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call more unwanted public attention to this known site, which could result in damage to the resource. Detailed management actions designed to protect historic mining and rock art are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs			
			Alternative A	Alternative B	Alternative C	Alternative E
Snake Creek Indian Burial Cave	40 acres	Archeological resource and cave (see Appendix Q for a complete description)	0 acres	40 acres	40 acres	40 acres
Under Alternative A, this is not an existing ACEC. Special management attention is required for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	0 acres	0 acres	0 acres
Stateline Canyon Graveyard (Rice Family Cemetery)	10 acres	Historic graveyard	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. Detailed management actions designed to protect historic cemeteries and isolated gravesites are part of Alternatives B, C, D, and E and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	0 acres	0 acres	0 acres
Sunshine Locality National Register District	34,540 acres	Paleo-Indian site	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call more unwanted public attention to this known site, which could result in damage to the resource. Detailed management actions designed to protect Paleo-Indian sites are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	0 acres	0 acres	0 acres
Templute Obsidian Source	29,767 acres	Obsidian source	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to this relatively unknown area, which could result in damage to the resource. Detailed management actions designed to protect tool-stone sources or quarries are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	0 acres	0 acres	0 acres

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs			
			Alternative A	Alternative B	Alternative C	Alternative E
Tri-County Paleo Site	19,967 acres	Paleo-Indian site	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call more unwanted public attention to this known site, which could result in damage to the resource. Detailed management actions designed to protect Paleo-Indian sites are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	0 acres	0 acres	0 acres
Upper Meadow Valley Archeological Zone	980 acres	Prehistoric camp sites and rock art	Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call more unwanted public attention to this known site, which could result in damage to the resource. Detailed management actions designed to protect prehistoric camp sites and rock art are part of these alternatives and provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			
Ward Mining District	2,500 to 11,000 acres	Historic mining area (see Appendix Q for a complete description)	0 acres	11,000 acres	3,000 acres	2,500 acres
Under Alternative A, this is not an existing ACEC. Special management attention is required for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Acreages vary by alternative as do management prescriptions. Management prescriptions are very restrictive for Alternative C in order to protect the cultural values from actions occurring in Alternative C. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.						

2.0 ALTERNATIVES

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
			DESERT TORTOISE HABITAT				
Beaver Dam Slope ACEC	36,900 acres	Desert tortoise habitat (see Appendix Q for a complete description)	36,900 acres	36,900 acres	36,900 acres	0 acres	36,900 acres
			This is an existing ACEC under Alternative A and about half is within designated wilderness. Special management attention is required and designation would be retained for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Kane Springs ACEC	65,900 acres	Desert tortoise habitat (see Appendix Q for a complete description)	65,900 acres	65,900 acres	65,900 acres	0 acres	65,900 acres
			This is an existing ACEC under Alternative A and about half is within designated wilderness. Special management attention is required and designation would be retained for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Mormon Mesa ACEC	109,700 acres	Desert tortoise habitat (see Appendix Q for a complete description)	109,700 acres	109,700 acres	109,700 acres	0 acres	109,700 acres
			This is an existing ACEC under Alternative A and about half is within designated wilderness. Special management attention is required and designation would be retained for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
			PALEONTOLOGICAL RESOURCES				
Andy's Mine Trilobites	100 acres	Trilobites	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. Criteria for protection of paleontological resources in Alternatives B, C, D, and E provide sufficient protection for the relevant and important values. A recreation project plan to be written under Alternatives B, C, D, and E would manage the use of all trilobite areas and preclude the need for special management through an ACEC. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.							
Chisholm Mine Trilobite Area	160 acres	Trilobites	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. Criteria for protection of paleontological resources in Alternatives B, C, D, and E provide sufficient protection for the relevant and important values. A recreation project plan to be written under Alternatives B, C, D, and E would manage the use of all trilobite areas and preclude the need for special management through an ACEC. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.							
Oak Springs Summit Trilobite Trail	40 acres	Trilobites	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. Criteria for protection of paleontological resources in Alternatives B, C, D, and E provide sufficient protection for the relevant and important values. A recreation project plan to be written under Alternatives B, C, D, and E would manage the use of all trilobite areas and preclude the need for special management through an ACEC. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.							
Ruin Wash and Klondyke Gap	160 acres	Fossil location	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. Criteria for protection of paleontological resources in Alternatives B, C, D, and E provide sufficient protection for the relevant and important values. A recreation project plan to be written under Alternatives B, C, D, and E would manage the use of all trilobite areas and preclude the need for special management through an ACEC. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.							

2.0 ALTERNATIVES

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
			GEOLOGIC RESOURCES				
Cave Valley Cave Geologic Area	40 acres	Cave resources	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. Management under the existing District Cave Management Plan precludes the need for special management through an ACEC for all the alternatives. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Garnet Hill	1,210 acres	Rock hounding for garnets (see Appendix Q for a complete description)	0 acres	0 acres	1,210 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. Special management attention is required for Alternative C in order to protect the cultural values within this commodity-oriented alternative (see Table 2.5-23). Special management attention is not required to protect rockhounding values for Alternatives B and E. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Leviathan Cave Geologic Area	160 acres	Cave resources	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. Management under the existing District Cave Management Plan precludes the need for special management through an ACEC for all the alternatives. The cave is located within a designated wilderness. The wilderness management plan for this area would address cave resources. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Whipple Cave Geologic Area	160 acres	Cave resources	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. Management under the existing District Cave Management Plan precludes the need for special management through an ACEC for all the alternatives. The cave is located within a designated wilderness. The wilderness management plan for this area would address cave resources. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
SCENIC VALUES							
Blue Mass Scenic area	950 acres	Spectacular rock spires and scenic pastoral setting (see Appendix Q for a complete description)	0 acres	950 acres	950 acres	0 acres	950 acres
			Under Alternative A, this is not an existing ACEC. Under Alternatives B, C, and E, the special management attention required would be through management as an ACEC instead of the existing scenic area (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Mt. Grafton and North Creek Scenic Areas	16,100 acres	Scenic limestone outcrops and vegetation (see Appendix Q for a complete description)	0 acres	16,100 acres	16,100 acres	0 acres	16,100 acres
			Under Alternative A, this is not an existing ACEC. Under Alternatives B, C, and E, the special management attention required would be through management as an ACEC instead of the existing scenic area (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Rainbow Canyon	45,827 acres	Scenic volcanic gorge	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. The proposed back country by-way in Alternatives C and E precludes the need for special management in these alternatives. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management. A higher visual resource management class is being assigned to this area through this RMP to protect the landscape under Alternatives B, C, D, and E.				

2.0 ALTERNATIVES

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
FLORA							
Heusser Mountain Bristlecone Research Natural Area	480 acres	Bristlecone Pine (see Appendix Q for a complete description)	0 acres	480 acres	480 acres	0 acres	480 acres
			Under Alternative A, this is not an existing ACEC. Special management attention is required for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management. This area is a Wilderness Study Area because of its instant study area status.				
Park Range Pristine Meadows	1,280 acres	Pristine Meadows	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. ACEC designation under Alternatives B, C, D, and E would call unwanted public attention to this relatively unknown area, which could result in damage to the resource. Currently this area is protected by its location within a designated Wilderness Study Area and physical access is extremely difficult. Both of these reasons limit access to the area. Further, under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Pygmy Sage Research Natural Area	160 acres	Pygmy Sage (see Appendix Q for a complete description)	0 acres	0 acres	160 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. Special management attention is required for Alternative C in order to protect this pygmy sage research natural area within this commodity-oriented alternative (see Table 2.5-23). Special management attention is not required to protect pygmy sage for Alternatives B and E. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Schlesser Pincushion at Bennett Springs Wash	5,207 acres	Schlesser Pincushion Cactus	0 acres	0 acres	0 acres	0 acres	0 acres
			Under all the alternatives, the BLM is directed by bureau policy to prevent listing of sensitive plants. The plan includes numerous standard operating procedures identified in the appendices to protect special status species. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Shoshone Ponds Natural Area	1,240 acres	Rocky Mountain juniper (Swamp Cedar) in alkali valley soils. Ponds with endangered fish (see Appendix Q for a complete description)	0 acres	1,240 acres	1,240 acres	0 acres	1,240 acres
			Under Alternative A, this is not an existing ACEC. Special management attention is required for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management. This area is a Wilderness Study Area because of its instant study area status.				
Sunnyside	4,213 acres	Sensitive plants	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. Under all the alternatives, the BLM is required by law to protect federally listed plant species and by bureau policy to prevent listing of sensitive plants. The plan includes numerous standard operating procedures identified in the appendices to protect special status species. This would provide sufficient protection for the relevant and important values.				
Swamp Cedar Natural Area	3,200 acres	Rocky Mountain juniper (Swamp Cedar) in alkali valley soils (see Appendix Q for a complete description)	0 acres	3,200 acres	3,200 acres	0 acres	3,200 acres
			Under Alternative A, this is not an existing ACEC. Special management attention is required for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management. This area is a Wilderness Study Area because of its instant study area status.				

2.0 ALTERNATIVES

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
FAUNA							
All remaining Sage Grouse and Pygmy Rabbit Habitat	Approximately 5 million acres	Sage Grouse and Pygmy Rabbit habitat	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. Under all the alternatives, the BLM is directed by bureau policy to prevent listing of BLM and state sensitive species. All of the alternatives provide for appropriate management of sage grouse and pygmy rabbit habitats. The plan includes numerous standard operating procedures identified in the appendices to protect special status species. This would provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Baking Powder Flat	11,326 acres	<i>Euphilotes bernardino minuta</i>	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. Under all the alternatives, the BLM is directed by bureau policy to prevent listing of BLM and state sensitive species. The plan includes numerous standard operating procedures identified in the appendices to protect special status species. This would provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Flat Spring	42 acres	Cold Spring System containing <i>Pygulopsis cruciglans</i> ,	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. Under all the alternatives, the BLM is directed by bureau policy to prevent listing of BLM and state sensitive species. The plan includes numerous standard operating procedures identified in the appendices to protect special status species. This would provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Hampton Creek	0.5 mile on public land	Bonneville Cutthroat Trout	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. Under all the alternatives, the BLM is directed by bureau policy to prevent listing of BLM and state sensitive species. The plan includes numerous standard operating procedures identified in the appendices to protect special status species. This would provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	0 acres	0 acres	0 acres	0 acres
Hendry's Creek	0.3 mile on public land	Bonneville Cutthroat Trout	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. Under all the alternatives, the BLM is directed by bureau policy to prevent listing of BLM and state sensitive species. This would provide sufficient protection for the relevant and important values. The plan includes numerous standard operating procedures identified in the appendices to protect special status species. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	0 acres	0 acres	0 acres	0 acres
Highland Range (including Highland Peak and Anderson Canyon)	10,626 acres	Two rare butterflies and the Basin Waxflower plant	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. Under all the alternatives, the BLM is directed by bureau policy to prevent listing of BLM and state sensitive species. The plan includes numerous standard operating procedures identified in the appendices to protect special status species. This would provide sufficient protection for the relevant and important values. Documentation of the existence of the two rare butterflies in the Highland Peak area could not be found. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	0 acres	0 acres	0 acres	0 acres
Pine (Ridge) Creek	2.5 miles on public land	Bonneville Cutthroat Trout	0 acres	0 acres	0 acres	0 acres	0 acres
Under Alternative A, this is not an existing ACEC. Under all the alternatives, the BLM is directed by bureau policy to prevent listing of BLM and state sensitive species. This would provide sufficient protection for the relevant and important values. The plan includes numerous standard operating procedures identified in the appendices to protect special status species. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.			0 acres	0 acres	0 acres	0 acres	0 acres

2.0 ALTERNATIVES

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Steptoe Valley Crescentspot	1,937 acres	BLM and state sensitive species butterfly	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. Under all the alternatives, the BLM is directed by bureau policy to prevent listing of BLM and state sensitive species. The plan includes numerous standard operating procedures identified in the appendices to protect special status species. This would provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
Turnley Spring	41 acres	Cold Spring System containing <i>Pygulopsis cruciflans</i>	0 acres	0 acres	0 acres	0 acres	0 acres
			Under Alternative A, this is not an existing ACEC. Under all the alternatives, the BLM is directed by bureau policy to prevent listing of BLM and state sensitive species. The plan includes numerous standard operating procedures identified in the appendices to protect special status species. This would provide sufficient protection for the relevant and important values. Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				
RIPARIAN/SPECIAL STATUS SPECIES							
Condor Canyon	6,900 acres	Riparian and special status species (see Appendix Q for a complete description)	0 acres	6,900 acres	6,900 acres	0 acres	6,900 acres
			Under Alternative A, this is not an existing ACEC. Special management attention is required for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				

Table 2.5-22 (Continued)

Nominated ACEC by Category	Acres/Miles of Public Land	Primary Resource Value	Management Considerations and Proposed Designations for ACECs				
			Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Goshute Canyon Natural Area	25,400 acres	Riparian and special status species and cave (see Appendix Q for a complete description)	0 acres	25,400 acres	25,400 acres	0 acres	25,400 acres
			Under Alternative A, this is not an existing ACEC. Special management attention is required for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management. This area is a Wilderness Study Area because of its instant study area status.				
Lower Meadow Valley Wash	10,100 acres	Riparian and special status species (see Appendix Q for a complete description)	0 acres	10,100 acres	10,100 acres	0 acres	10,100 acres
			Under Alternative A, this is not an existing ACEC. Special management attention is required for Alternatives B, C, and E to protect the relevant and important values (see Table 2.5-23). Under Alternative D, the restrictions on resource management and permitted uses preclude the need for special management.				

Table 2.5-23
Summary of Management Practices by Alternative for Existing and Proposed ACECs

Resource Constraints ²	Three Existing ACECs ¹					
	Beaver Dam Slope		Kane Springs		Mormon Mesa	
	Alternative(s)		Alternative(s)		Alternative(s)	
	A, B, C, and E	D	A, B, C, and E	D	A, B, C, and E	D
Right-of-way	36,900 acres L/AV	0 acres	65,900 acres L/AV	0 acres	109,700 acres L/AV	0 acres
Off-highway vehicle use	C/L		C/L		C/L	
Visual resource management	I, III, IV		I, III, IV		I, III, IV	
Plant collecting	L		L		L	
Road maintenance	L		L		L	
Leasable minerals	OWS		C		OWS	
Locatable minerals	O		C, W*		O	
Saleable minerals	C/L		C		C/L	
Lands disposal	ND		ND		ND	
Fire management	L		L		L	
Transportation	L		L		L	
Livestock management	C		C		C	
Fuelwood cutting	NA		NA		NA	

¹See key following table for explanation.

²See key following table for explanation.

Table 2.5-23 (Continued)

Resource Constraints ²	Newly Proposed ACECs							
	The Baker Archaeological Site			Rose Guano Bat Cave		Blue Mass Scenic Area		
	Alternative(s)			Alternative(s)		Alternative(s)		
	A and D 0 acres	B and C 80 acres	E 80 acres	A and D 0 acres	B, C, and E 40 acres	A and D 0 acres	B, C, and E 950 acres	
Right-of-way		AV	AV		AV		E1	
Off-highway vehicle use		L	L		L		L	
Visual resource management		II	II		II		I	
Plant collecting		L	L		L		L	
Road maintenance		L	L		L		L	
Leasable minerals		C	NSO		NSO		NSO	
Locatable minerals		C, W*	C, W*		C		C	
Saleable minerals		C	C		C		C	
Lands disposal		ND	ND		ND		ND	
Fire management		O	O		O		L	
Transportation		NNR	NNR		NNR		L, NNR	
Livestock management		L	L		O		O	
Fuelwood cutting		NA	NA		O		L	

Table 2.5-23 (Continued)

	Newly Proposed ACECs					
	Condor Canyon		Garnet Hill		Goshute Canyon Natural Area	
	Alternative(s)		Alternative(s)		Alternative(s)	
Resource Constraints ²	A and D 0 acres	B, C, and E 6,900 acres	A, B, D, and E 0 acres	C 1,210 acres	A and D 0 acres	B, C, and E 25,400 acres
Right-of-way		E*		AV		E
Off-highway vehicle use		L		L		L
Visual resource management		I/II		I/II		I
Plant collecting		C		O		L
Road maintenance		L		L		L
Leasable minerals		C		O		NSO
Locatable minerals		C, E1, W*		O		C
Saleable minerals		C		O		C
Lands disposal		ND		ND		ND
Fire management		L		O		L
Transportation		NNR		NA		L
Livestock management		L		O		O
Fuelwood cutting		O		O		L

Table 2.5-23 (Continued)

Resource Constraints ²	Newly Proposed ACECs									
	Heusser Bristlecone Research Natural Area			Honeymoon Hill / City of Rocks						
	Alternative(s)			Alternative(s)						
	A and D 0 acres	B and E 480 acres	C 480 acres	A and D 0 acres	B 3,900 acres	C 5,900 acres	E 3,900 acres			
Right-of-way		E1	E1		AV	AV	AV			
Off-highway vehicle use		C	C		L	L	L			
Visual resource management		I	I		I/II	II	I/II			
Plant collecting		C	C		L	L	L			
Road maintenance		C	C		L	L	L			
Leasable minerals		NSO	O		C	C	NSO			
Locatable minerals		C	C		C, W*	C, W*	C, W*			
Saleable minerals		O	O		C	C	C			
Lands disposal		ND	ND		ND	ND	ND			
Fire management		L	L		O	O	O			
Transportation		C	C		NNR	NNR	NNR			
Livestock management		L	L		O	O	O			
Fuelwood cutting		C	C		O	O	O			

Table 2.5-23 (Continued)

	Newly Proposed ACECs							
	Lower Meadow Valley Wash			Mount Grafton				
	Alternative(s)			Alternative(s)				
	A and D 0 acres	B and E 10,100 acres	C 10,100 acres	A and D 0 acres	B and E 16,100 acres	C 16,100 acres	A and D 0 acres	B, C, and E 26,200 acres
Resource Constraints ²		AV	AV		E1	E1		AV/E1
Right-of-way		C	C		L	L		L
Off-highway vehicle use		I/II	I/II		I	I		II
Visual resource management		C	C		L	L		L
Plant collecting		L	L		L	L		L
Road maintenance		C	C		NSO	O		C
Leasable minerals		C	C		C	C		C, W*
Locatable minerals		C	C		C	C		C
Saleable minerals		ND	ND		ND	ND		ND
Lands disposal		L	L		L	L		O
Fire management		NNR	NNR		L	L		NNR
Transportation		C/L	L		O	O		L
Livestock management		C	C		C	C		O
Fuelwood cutting								

Table 2.5-23 (Continued)

	Newly Proposed ACECs						
	Osceola and Osceola Ditch		Pahroc Rock Art		Pygmy Sage		
	Alternative(s)		Alternative(s)		Alternative(s)		
Resource Constraints ²	A and D 0 acres	B, C, and E 14,600 acres	A and D 0 acres	B and C 3,200 acres	E 3,200 acres	A, B, D, and E 0 acres	C 160 acres
Right-of-way		AV		AV	AV		E1
Off-highway vehicle use		L		L	L		L
Visual resource management		II		II/III	II/III		II/III
Plant collecting		L		L	L		C
Road maintenance		L		L	L		L
Leasable minerals		NSO		OWS	C		C
Locatable minerals		O		C, W*	C, W*		C
Saleable minerals		C		C	C		C
Lands disposal		ND		ND	ND		ND
Fire management		O		O	O		L
Transportation		NNR		NNR	NNR		L
Livestock management		O		O	O		L
Fuelwood cutting		O		O	O		C

Table 2.5-23 (Continued)

	Newly Proposed ACECs									
	Hendry's Creek/Rock Animal Corral				Shooting Gallery			Shoshone Ponds		
	Alternative(s)				Alternative(s)			Alternative(s)		
Resource Constraints ²	A and D 0 acres	B and C 3,300 acres	E 3,300 acres	A and D 0 acres	B, C, and E 20,700 acres	A and D 0 acres	B, C, and E 20,700 acres	A and D 0 acres	B, C, and E 1,240 acres	
Right-of-way		AV	AV		AV/E1				E	
Off-highway vehicle use		L	L		L				L	
Visual resource management		II	II		II				I/II	
Plant collecting		L	L		L				C	
Road maintenance		L	L		L				L	
Leasable minerals		NSO	NSO		C				C	
Locatable minerals		C, W*	C, W*		C, W*				C	
Saleable minerals		C	O/C		C				C	
Lands disposal		ND	ND		ND				ND	
Fire management		O	O		O				L	
Transportation		NNR	NNR		NNR				L	
Livestock management		C	O		L				L	
Fuelwood cutting		C	O		O				C	

Table 2.5-23 (Continued)

	Newly Proposed ACECs									
	Snake Creek Indian Burial Cave			Swamp Cedar			Ward Mining District			
	Alternative(s)			Alternative(s)			Alternative(s)			
Resource Constraints ²	A and D	B, C, and E		A and D	B and E	C	A and D	B	C	E
	0 acres	40 acres		0 acres	3,200 acres	3,200 acres	0 acres	11,000 acres	3,000 acres	2,500 acres
Right-of-way		AV			E1	E1		AV	E	AV
Off-highway vehicle use		L			L	L		L	L	L
Visual resource management		II			I/II	I/II		II	II	II
Plant collecting		L			C	C		L	L	L
Road maintenance		L			L	L		L	L	L
Leasable minerals		C			NSO	OWS		OWS	C	OWS
Locatable minerals		C, W*			C	C		C, W*	C, W*	O
Saleable minerals		C			C	C		C	C	C
Lands disposal		ND			ND	ND		ND	ND	ND
Fire management		O			L	L		O	O	O
Transportation		NNR			L	L		NNR	NNR	NNR
Livestock management		C			O	O		C	C	O
Fuelwood cutting		C			C	C		C	C	O

Key:¹Acres within the existing Beaver Dam Slope, Kane Springs, and Mormon Mesa ACECs are those within the Ely District.²AV = Avoidance area; granting rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with identified resource values and impacts can be mitigated.

C = Closed to off-highway vehicles use, mineral material removal, leaseable minerals, prescribed fires, livestock grazing, and fuelwood cutting.

E = Exclusion area; rights-of-way would not be granted within the area.

E* = No rights-of-way except for federal reservation to manage for ACEC.

E1 = Valid existing rights would remain in effect.

I/II = Foreground distance zone is visual resource management Class I; middle ground distance zone is visual resource management Class II.

I/III = Foreground distance zone is visual resource management Class II; middle ground distance zone is visual resource management Class III.

L = Limited; limitations applicable to rights-of-way, off-highway vehicle use, plant collecting, road maintenance, wild fire use, and livestock grazing.

Rights-of-way: limit authorization of future communication sites to existing established rights-of-way unless technically unfeasible and encourage use of existing corridors for all future rights-of-way when possible.

Off-highway vehicle use: use would be limited to designated roads and trails.

Plant collecting: plant materials, including common species, may be collected by permit only.

Road maintenance: maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.

Wild fire use: limited to actions appropriate for the Mojave Desert.

Livestock grazing: livestock grazing would be controlled through terms and conditions on the grazing permit

2.0 ALTERNATIVES

Table 2.5-23 (Continued)

NA =	Not applicable.
ND	No disposal.
NNR =	No new roads.
NSO =	No Surface Occupancy. Open to mineral leasing subject to no surface occupancy stipulations.
O =	Open. The activity is allowed in the area. NEPA compliance and clearances for cultural resources and threatened and endangered species required for some activities. Mineral activity is subject to standard stipulations (where appropriate), NEPA compliance, and application of site-specific controls. Standard terms and conditions of the grazing permits would apply.
O/C =	Continue sales within existing community pit.
OWS =	Open with special stipulations. Open to mineral leasing activities subject to controlled surface use, seasonal timing restrictions, and/or restricted or no uses in avoidance areas (e.g., riparian areas, live water, areas with special wildlife or plant features, and sensitive viewsheds).
W* =	Withdrawal. Areas recommended (to the Secretary of the Interior) for withdrawal from operation of the mining laws (locatable mineral entry).

2.5 Management Direction for Resource Programs

The Kane Springs ACEC is managed primarily for the recovery of the desert tortoise, with the following management prescriptions.

- Rights-of-Way: Limited right-of-way corridors, designated right-of-way avoidance areas, and limited aerial and material rights-of-way.
- Off-highway Vehicle: Limited casual off-highway vehicle use, closed organized off-highway vehicle use, and limited general recreation use.
- Visual Resource Management: Visual Resource Management Classes I, III, and IV exist within the ACECs.
- Plant Collection: Limited to special use permits.
- Road Maintenance: Limited seasonally and by Section 7 consultations.
- Leasable Minerals: Kane Springs ACEC: Closed; Beaver Dam Slope and Mormon Mesa ACECs: Open with minor seasonal oil and gas stipulations.
- Locatable Minerals: Kane Springs ACEC: Closed; Dam Slope and Mormon Mesa ACECs: Open.
- Saleable Minerals: Kane Springs: Closed; Beaver Dam Slope and Mormon Mesa ACEC: Open with Standard Operating Procedure limitations.
- Land Disposal: No disposals or surface disturbance.
- Fire Management: Full suppression, with limitations in suppression activities.
- Transportation: Limited to existing roads with speed limitations and with recommendations for road closures and reclamation.
- Livestock Grazing Management: Closed.
- Fuel Wood Cutting: Not applicable.

Alternative B

Same as Alternative A.

Alternative C

Same as Alternative A.

2.0 ALTERNATIVES

Alternative D

These areas would be removed from ACEC designation, although management prescriptions would remain the same.

Alternative E

Same as Alternative A.

Baker Archaeological Site ACEC Management Actions/Alternatives

Alternative A

Baker Archaeological Site would not be designated as an ACEC and management would continue as at present, with uses and impacts evaluated on a case-by-case basis. In 1970, the Baker Archaeological Site (80 acres) was segregated from disposal under the public land laws, including the general mining laws, but not the Recreation and Public Purposes Act or the mineral leasing and material sale laws. This segregation only ensured that the Baker Archaeological Site would remain in public ownership. The purpose of the 1970 designation was to protect archaeological values.

- Rights-of-Way: Open
- Off-highway Vehicles: Open
- Visual Resource Management: Visual Resource Management Class IV
- Plant Collection: Open
- Road Maintenance: Open
- Leasable Minerals: No Surface Occupancy
- Locatable Minerals: Open
- Saleable Minerals: Open
- Lands: Open
- Fire Management: Open
- Transportation: Open
- Livestock Management: Open
- Fuel Wood Cutting: Open

Alternative B

The following special management, beyond the management described and provided for under Alternative A, would be required to protect the relevant and important values for the Baker Archaeological Site ACEC. The special management actions for this ACEC include:

- ACEC acreage: 80 acres.

2.5 Management Direction for Resource Programs

- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Class II.
- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: Closed.
- Locatable Mineral: Closed and recommended to be withdrawn from locatable mineral entry.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Open - The Baker Archaeological Site ACEC would be open to fire management (vegetation would be managed in such a way as to protect the archaeological site, ramada/kiosk, and restrooms from fire damage).
- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Limited. The 80 acre ACEC would be fenced and the 80 acre ACEC would be closed to livestock grazing. Cattleguards and/or gates would be installed at appropriate locations.
- Fuel Wood Cutting: Not applicable.

Alternative C

Same as Alternative B.

Alternative D

Same as Alternative A.

2.0 ALTERNATIVES

Alternative E

The following special management, beyond the management described and provided for under Alternative A, would be required to protect the relevant and important values for the Baker Archaeological Site ACEC. The special management actions for this ACEC include:

- ACEC acreage: 80 acres.
- Rights-of-Way: Avoidance area, granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management level for this ACEC would be Level II.
- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: No Surface Occupancy.
- Locatable Mineral: Closed and recommended to be withdrawn from locatable mineral entry.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Open – The Baker Archaeological Site ACEC would be open to fire management (vegetation would be managed in such a way as to protect the archaeological site, ramada/kiosk, and restrooms from fire damage).
- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Limited. The 80-acre ACEC would be fenced and the 80-acre ACEC would be closed to livestock grazing. Cattleguards and/or gates would be installed at appropriate locations.
- Fuel Wood Cutting: Not applicable.

Rose Guano Bat Cave ACEC Management Actions/Alternatives

Alternative A

Rose Guano Bat Cave would not be designated as an ACEC and management would continue as at present with uses and impacts evaluated on a case-by-case basis. In 1970, Rose Guano Bat Cave was designated a Historic Area under the name Bat Cave and Guano Mine. This Historic Area was segregated from all appropriation including mining laws, but not the Recreation and Public Purposes Act nor the mineral leasing and material sales laws. This segregation only ensured that the Rose Guano Bat Cave, Bat Cave and Guano Mine Historic Area would remain in public ownership. The purpose of the 1970 designation was to protect historic and special status species values.

- Rights-of-Way: Open
- Off-highway Vehicles: Open
- Visual Resource Management: Visual Resource Management Class IV
- Plant Collection: Open
- Road Maintenance: Open
- Leasable Minerals: Open
- Locatable Minerals: Open
- Saleable Minerals: Open
- Lands: Open
- Fire Management: Open
- Transportation: Open
- Livestock Management: Open
- Fuel Wood Cutting: Open

Alternative B

The following special management, beyond the management described and provided for under Alternative A, would be required to protect the relevant and important values for the Rose Guano Bat Cave ACEC. The special management actions for this ACEC include:

- ACEC acres: 40 acres.
- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Class II.

2.0 ALTERNATIVES

- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: No Surface Occupancy.
- Locatable Mineral: Closed.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Open – The Rose Guano Bat Cave ACEC would be open to fire management (vegetation would be managed in such a way as to protect the cave from fire damage).
- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Open.
- Fuel Wood Cutting: Open.

Alternative C

Same as Alternative B.

Alternative D

Same as Alternative A.

Alternative E

Same as Alternative B.

Blue Mass Scenic Area ACEC Management Actions/Alternatives

Alternative A

This area would continue under current management.

Alternative B

The following special management would be required to protect the relevant and important values for the Blue Mass Scenic Area ACEC. The special management actions for this ACEC include:

- ACEC acres: 950 acres.
- Rights-of-Way: Valid existing rights would remain in effect.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Class I.
- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: No Surface Occupancy.
- Locatable Mineral: Closed.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Limited.
- Transportation: Limited. No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Open.
- Fuel Wood Cutting: Limited.

Alternative C

Same as Alternative B.

Alternative D

Same as Alternative A.

2.0 ALTERNATIVES

Alternative E

Same as Alternative B.

Condor Canyon ACEC Management Actions/Alternatives

Alternative A

Condor Canyon would not be designated as an ACEC and management would continue as at present with uses and impacts evaluated on a case-by-case basis.

- Right-of-way: Open.
- Off-highway vehicle: Open.
- Visual Resource Management: Visual Resource Management Classes III and IV exist within the area.
- Plant Collection: Open.
- Road Maintenance: Open.
- Leasable Minerals: Closed.
- Locatable Minerals: Closed and recommended to be withdrawn from mineral entry. Valid existing rights would remain in effect.
- Saleable Minerals: Closed.
- Lands: Open.
- Fire Management: Open.
- Transportation: Open.
- Livestock Management: Limited. Closed to permitted use February 15 through November 15.
- Fuel Wood Cutting: Open.

Alternative B

The following special management, beyond the management described and provided for under Alternative A, would be required to protect the relevant and important values for the Condor Canyon ACEC. The special management actions for within the ACEC include:

- ACEC acres: 6,900 acres.
- Right-of-way: No new rights-of-way would be granted except for federal reservation to manage the ACEC.
- Off-highway Vehicle: Limited off-highway vehicle use would be authorized within the ACEC. Off-highway vehicles would be restricted to only the existing road and trails. Off-highway vehicle use on or within the actual perennial riparian corridor or side drainage/washes would not be allowed. Existing riparian crossings would be detoured, closed, or managed to mitigate impacts. Duplicate trails/routes to the same location would be closed and restored.
- Visual Resource Management: The foreground distance zone visual resource management is Class I; middle ground distance zone is a Visual Resource Management Class II.
- Plant Collection: Closed.
- Road Maintenance: Limited road maintenance would be allowed within the ACEC on only the portion of the main entrance road from the southwest canyon entrance to the first stream crossing. No road maintenance would be allowed on any other portion of the road, railway/right-of-way, or off-highway vehicle trails.
- Leasable Minerals: Closed.
- Locatable Minerals: Closed and withdrawn from mineral entry, with valid existing rights remaining in effect.
- Saleable Minerals: Closed.
- Lands: Disposals would not be allowed to occur within the ACEC. Acquisitions of private property from willing sellers within and proximate to the established ACEC border would be a high priority and encouraged.
- Fire Management: Limited. Full suppression of wildfire starts, with special riparian standard operating procedures for fire management actions within the ACEC.
- Transportation: No new roads allowed within the ACEC.

2.0 ALTERNATIVES

- Livestock Management: Limited. Closed to permitted use from February 15 through November 15.
- Fuel Wood Cutting: Open.

Alternative C

Same as Alternative B.

Alternative D

Same as Alternative A.

Alternative E

Same as Alternative B.

Garnet Hill ACEC Management Actions/Alternatives

Alternative A

This area would continue under current management.

Alternative B

Same as Alternative A.

Alternative C

The following special management would be required to protect the relevant and important values for the Garnet Hill ACEC. The special management actions for this ACEC include:

- ACEC acres: 1,210 acres.
- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Classes I and II.
- Plant Collection: Open.

2.5 Management Direction for Resource Programs

- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: No Surface Occupancy.
- Locatable Mineral: Open.
- Saleable Minerals: Open.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Limited.
- Transportation: Not applicable.
- Livestock Management: Open.
- Fuel Wood Cutting: Open.

Alternative D

Same as Alternative A.

Alternative E

Same as Alternative A.

Goshute Canyon ACEC Management Actions/Alternatives

Alternative A

This area would continue under current management.

Alternative B

The following special management would be required to protect the relevant and important values for the Goshute Canyon ACEC. The special management actions for this ACEC include:

- ACEC acres: 25,400 acres.
- Rights-of-Way: Exclusion area: rights-of-way would not be granted within the area.

2.0 ALTERNATIVES

- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Class I.
- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: No Surface Occupancy.
- Locatable Mineral: Closed.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Limited.
- Transportation: Limited. No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Open.
- Fuel Wood Cutting: Limited.

Alternative C

Same as Alternative B.

Alternative D

Same as Alternative A.

Alternative E

Same as Alternative B.

Heusser Bristlecone ACEC Management Actions/Alternatives

Alternative A

This area would continue under current management.

Alternative B

The following special management would be required to protect the relevant and important values for the Heusser Bristlecone ACEC. The special management actions for this ACEC include:

- ACEC acres: 480 acres.
- Rights-of-Way: Valid existing rights would remain in effect.
- Off-highway Vehicles: Closed.
- Visual Resource Management: The visual resource management class for this ACEC would be Class I.
- Plant Collection: Closed.
- Road Maintenance: Closed.
- Leasable Minerals: No Surface Occupancy.
- Locatable Mineral: Closed.
- Saleable Minerals: Open.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Limited.
- Transportation: Closed.
- Livestock Management: Limited.
- Fuel Wood Cutting: Closed.

Alternative C

Same as Alternative B, with the exception that the area would be open to leasable minerals.

2.0 ALTERNATIVES

Alternative D

Same as Alternative A.

Alternative E

Same as Alternative B.

Honeymoon Hill/City of Rocks ACEC Management Actions/Alternatives

Alternative A

Honeymoon Hill/City of Rocks would not be designated as an ACEC and management would continue as at present with uses and impacts evaluated on a case-by-case basis.

- Rights-of-Way: Open
- Off-highway Vehicles: Open
- Visual Resource Management: No visual resource management class (no inventory)
- Plant Collection: Open
- Road Maintenance: Open
- Leasable Minerals: Open
- Locatable Minerals: Open
- Saleable Minerals Open
- Lands: Open
- Fire Management: Open
- Transportation: Open
- Livestock Management: Open
- Fuel Wood Cutting: Open

Alternative B

The following special management would be required to protect the relevant and important values for the Honeymoon Hill/City of Rocks ACEC. The special management actions for this ACEC include:

- ACEC acres: 3,900 acres.
- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Use would be limited to designated roads and trails.

2.5 Management Direction for Resource Programs

- Visual Resource Management: The visual resource management class for this ACEC would be Class II.
- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: Closed.
- Locatable Mineral: Closed and recommended to be withdrawn from locatable mineral entry.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Open – The Honeymoon Hill/City of Rocks ACEC would be open to fire management (vegetation would be managed in such a way as to protect the rock art and scenic geologic area from fire damage).
- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Open.
- Fuel Wood Cutting: Open.

Alternative C

The following special management would be required to protect the relevant and important values for the Honeymoon Hill/City of Rocks ACEC. The special management actions for this ACEC include:

- ACEC acres: 5,900 acres.
- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Class II.

2.0 ALTERNATIVES

- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: Closed.
- Locatable Mineral: Closed and recommended to be withdrawn from locatable mineral entry.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Open – The Honeymoon Hill/City of Rocks ACEC would be open to fire management (vegetation would be managed in such a way as to protect the rock art and scenic geologic area from fire damage).
- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Open.
- Fuel Wood Cutting: Open.

Alternative D

Same as Alternative A.

Alternative E

The following special management would be required to protect the relevant and important values for the Honeymoon Hill/City of Rocks ACEC. The special management actions for this ACEC include:

- ACEC acres: 3,900 acres.
- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Use would be limited to designated roads and trails.

2.5 Management Direction for Resource Programs

- Visual Resource Management: The visual resource management class for the foreground distance zone at this ACEC would be Visual Resource Management Class I and the middle ground distance zone would be Visual Resource Management Class II.
- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: No Surface Occupancy.
- Locatable Mineral: Closed and recommended to be withdrawn from locatable mineral entry.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Open – The Honeymoon Hill/City of Rocks ACEC would be open to fire management (vegetation would be managed in such a way as to protect the rock art and scenic geologic area from fire damage).
- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Open.
- Fuel Wood Cutting: Open.

Lower Meadow Valley Wash ACEC Management Actions/Alternatives

Alternative A

This area would not be designated as an ACEC.

Alternative B

The following special management would be required to protect the relevant and important values for the Lower Meadow Valley Wash ACEC. The special management actions for this ACEC include:

- ACEC acres: 3,240 acres.

2.0 ALTERNATIVES

- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Closed.
- Visual Resource Management: The visual resource management class for this ACEC would be Classes I and II.
- Plant Collection: Closed.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: Closed.
- Locatable Mineral: Closed.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Limited.
- Transportation: No new roads.
- Livestock Management: Closed for Carp and Rox units, limited for Rainbow unit.
- Fuel Wood Cutting: Closed.

Alternative C

The following special management would be required to protect the relevant and important values for the Lower Meadow Valley Wash ACEC. The special management actions for this ACEC include:

- ACEC acres: 3,240 acres.
- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Closed.

2.5 Management Direction for Resource Programs

- Visual Resource Management: The visual resource management class for this ACEC would be Classes I and II.
- Plant Collection: Closed.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: Closed.
- Locatable Mineral: Closed.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Limited.
- Transportation: No new roads.
- Livestock Management: Limited.
- Fuel Wood Cutting: Closed.

Alternative D

Same as Alternative A.

Alternative E

Same as Alternative B with the exception that livestock management would be limited for the Carp, Rox, and Rainbow Units.

Mount Grafton ACEC Management Actions/Alternatives

Alternative A

This area would continue under current management.

2.0 ALTERNATIVES

Alternative B

The following special management would be required to protect the relevant and important values for the Mount Grafton ACEC. The special management actions for this ACEC include:

- ACEC acres: 16,100 acres.
- Rights-of-Way: Exclusion area; rights of way would not be granted within the area.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Class I.
- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: No Surface Occupancy.
- Locatable Mineral: Closed.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Limited.
- Transportation: Limited. No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Open.
- Fuel Wood Cutting: Limited.

Alternative C

Same as Alternative B.

Alternative D

Same as Alternative A.

Alternative E

Same as Alternative B with the exception that the area would be open to mineral leasing.

Mount Irish ACEC Management Actions/Alternatives

Alternative A

Mount Irish would not be designated as an ACEC and management would continue as at present with uses and impacts evaluated on a case-by-case basis. In 1970, Mount Irish received an Archaeological Site (640 acres) designation. This designation segregated the 640 acres from all forms of appropriation under the public land laws, except the Recreation and Public Purposes Act. This segregation only ensured that the 640 acres of the Mount Irish Archaeological Site would remain in public ownership. The purpose of the 1970 designation was to protect archaeological values. In 1983 the National Register of Historic Places nomination enlarged the boundaries (1,920 acres) to reflect new survey data. The National Register nomination did not offer any extra protection to the archaeological values in the archaeological district. Crescent Mill and Logan City are not part of the 640-acre archaeological site designation or the 1,920-acre Mount Irish Archaeological District.

- Rights-of-Way: Open
- Off-highway Vehicles: Open
- Visual Resource Management: Visual Resource Management Class IV
- Plant Collection: Open
- Road Maintenance: Open
- Leasable Minerals: Open
- Locatable Minerals: Open
- Saleable Minerals: Open
- Lands: Open
- Fire Management: Open
- Transportation: Open
- Livestock Management: Open
- Fuel Wood Cutting: Open

Alternative B

The following special management would be required to protect the relevant and important values for the Mount Irish ACEC. The special management actions for this ACEC include:

- ACEC acres: 26,200 acres.

2.0 ALTERNATIVES

- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated. Valid existing rights would remain in effect.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Class II.
- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: Closed.
- Locatable Mineral: Closed and recommended to be withdrawn from locatable mineral entry.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Open - The Mount Irish ACEC would be open to fire management (vegetation would be managed in such a way as to protect the rock art and the historic resources from fire damage).
- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Limited – Livestock within the ACEC would be controlled through terms and conditions of the grazing permit so as to protect the resources (rock art, historic foundations, and structures) from adverse livestock impacts.
- Fuel Wood Cutting: Open.

Alternative C

Same as Alternative B.

Alternative D

Same as Alternative A.

Alternative E

Same as Alternative B.

Osceola/Osceola Ditch ACEC Management Actions/Alternatives

Alternative A

Osceola and the Osceola Ditch would not be designated as an ACEC and management would continue as at present with uses and impacts evaluated on a case-by-case basis. Portions of the Osceola Ditch (east and west) have been placed on the National Register of Historic Places.

- Rights-of-Way: Open
- Off-highway Vehicles: Open
- Visual Resource Management: Visual Resource Management Class IV
- Plant Collection: Open
- Road Maintenance: Open
- Leasable Minerals: Open
- Locatable Minerals: Open
- Saleable Minerals Open
- Lands: Open
- Fire Management: Open
- Transportation: Open
- Livestock Management: Open
- Fuel Wood Cutting: Open

Alternative B

The following special management would be required to protect the relevant and important values for the Osceola/Osceola Ditch ACEC. The special management actions for this ACEC include:

- ACEC acres: 14,600 acres.
- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Class II.

2.0 ALTERNATIVES

- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: No Surface Occupancy.
- Locatable Mineral: Open.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Open – The Osceola/Osceola Ditch ACEC would be open to fire management (vegetation would be managed in such a way as to protect the townsite, cemetery, and other historic resources from fire damage).
- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Open.
- Fuel Wood Cutting: Open.

Alternative C

Same as Alternative B.

Alternative D

Same as Alternative A.

Alternative E

Same as Alternative B.

Pahroc Rock Art ACEC Management Actions/Alternatives

Alternative A

The Pahroc Rock Art ACEC would not be designated as an ACEC and management would continue as at present with uses and impacts evaluated on a case-by-case basis.

- Rights-of-Way: Open
- Off-highway Vehicles: Open
- Visual Resource Management: Visual Resource Management Class IV
- Plant Collection: Open
- Road Maintenance: Open
- Leasable Minerals: Open
- Locatable Minerals: Open
- Saleable Minerals: Open
- Lands: Open
- Fire Management: Open
- Transportation: Open
- Livestock Management: Open
- Fuel Wood Cutting: Open

Alternative B

The following special management would be required to protect the relevant and important values for the Pahroc Rock Art ACEC. The special management actions for this ACEC include:

- ACEC acreage: 3,200 acres.
- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: foreground distance would be Visual Resource Management Class II; middle ground distance zone would be Visual Resource Management Class III.
- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.

2.0 ALTERNATIVES

- Leasable Minerals: Surface use stipulations.
- Locatable Mineral: Closed and recommended to be withdrawn from locatable mineral entry.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Open – The Pahroc Rock Art ACEC would be open to fire management (vegetation would be managed in such a way as to protect the rock art from fire damage).
- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Open.
- Fuel Wood Cutting: Open.

Alternative C

Same as Alternative B.

Alternative D

Same as Alternative A.

Alternative E

The following special management would be required to protect the relevant and important values for the Pahroc Rock Art ACEC. The special management actions for this ACEC include:

- ACEC acreage: 3,200 acres.
- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: foreground distance would be Visual Resource Management Class II; middle ground distance zone would be Visual Resource Management Class III.

2.5 Management Direction for Resource Programs

- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: Closed.
- Locatable Mineral: Closed and recommended to be withdrawn from locatable mineral entry.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Open – The Pahroc Rock Art ACEC would be open to fire management (vegetation would be managed in such a way as to protect the rock art from fire damage).
- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Open.
- Fuel Wood Cutting: Open.

Pygmy Sage ACEC Management Actions/Alternatives

Alternative A

This area would continue under current management.

Alternative B

Same as Alternative A.

Alternative C

Special management would be required to protect the relevant and important values for the Pygmy Sage ACEC. The special management actions for this ACEC include:

- ACEC acres: 160 acres.
- Rights-of-Way: Valid existing rights would remain in effect.

2.0 ALTERNATIVES

- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Classes I and II.
- Plant Collection: Closed.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: Closed.
- Locatable Mineral: Closed.
- Saleable Minerals: Open.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Limited.
- Transportation: Limited. No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Limited.
- Fuel Wood Cutting: Closed.

Alternative D

Same as Alternative A.

Alternative E

Same as Alternative A.

Hendry's Creek/Rock Animal Corral ACEC Management Actions/ Alternatives

Alternative A

Hendry's Creek/Rock Animal Corral would not be designated as an ACEC and management would continue as at present with uses and impacts evaluated on a case-by-case basis. In 1970, the Rock Animal Corral (160 acres) received an Archaeological Site designation. This designation segregated the 160 acres from all

2.5 Management Direction for Resource Programs

forms of appropriation under the public land laws, except the Recreation and Public Purposes Act or the mineral leasing or material sales laws. This segregation only ensured that the Rock Animal Corral Archaeological Site would remain in public ownership. The purpose of the 1970 designation was to protect archaeological values (antelope walls). The rock art and rock shelters in the Hendry's Creek area are not included in the 160-acre Archaeological Site designation.

- Rights-of-Way: Open
- Off-highway Vehicles: Open
- Visual Resource Management: Visual Resource Management Class IV
- Plant Collection: Open
- Road Maintenance: Open
- Leasable Minerals: Open with no surface occupancy on the 160 acres of the Rock Animal Corral only
- Locatable Minerals: Open
- Saleable Minerals: Open
- Lands: Open
- Fire Management: Open
- Transportation: Open
- Livestock Management: Open
- Fuel Wood Cutting: Open

Alternative B

The following special management would be required to protect relevant and important values for the Hendry's Creek/Rock Animal Corral ACEC. The special management actions for this ACEC include:

- ACEC acreage: 3,300 acres.
- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Class II.
- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.

2.0 ALTERNATIVES

- Leasable Minerals: No Surface Occupancy.
- Locatable Mineral: Closed and recommended to be withdrawn from locatable mineral entry.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Open – The Hendry's Creek/Rock Animal Corral ACEC would be open to fire management (vegetation would be managed in such a way as to protect the antelope wall, rock art, and rockshelters from fire damage).
- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Closed.
- Fuel Wood Cutting: Closed.

Alternative C

Same as Alternative B.

Alternative D

Same as Alternative A.

Alternative E

The following special management would be required to protect relevant and important values for the Hendry's Creek/Rock Animal Corral ACEC. The special management actions for this ACEC include:

- ACEC acreage: 3,300 acres.
- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Class II.

2.5 Management Direction for Resource Programs

- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: No Surface Occupancy.
- Locatable Mineral: Closed and recommended to be withdrawn from locatable mineral entry.
- Saleable Minerals: Open, sales would continue within existing community pit only.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Open – The Hendry's Creek/Rock Animal Corral ACEC would be open to fire management (vegetation would be managed in such a way as to protect the antelope wall, rock art, and rockshelters from fire damage).
- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Open.
- Fuel Wood Cutting: Open.

Shooting Gallery ACEC Management Actions/Alternatives

Alternative A

The Shooting Gallery would not be designed as an ACEC and management would continue as at present with uses and impacts evaluated on a case-by-case basis.

- Rights-of-Way: Open
- Off-highway Vehicles: Open
- Visual Resource Management: Visual Resource Management Class IV
- Plant Collection: Open
- Road Maintenance: Open
- Leasable Minerals: Open
- Locatable Minerals: Open
- Saleable Minerals: Open
- Lands: Open
- Fire Management: Open

2.0 ALTERNATIVES

- Transportation: Open
- Livestock Management: Open
- Fuel Wood Cutting: Open

Alternative B

The following special management would be required to protect the relevant and important values for the Shooting Gallery ACEC. The special management actions for this ACEC include:

- ACEC acreage: 20,700 acres.
- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated. Valid existing rights would remain in effect.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Class II.
- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: Closed.
- Locatable Mineral: Closed and recommended to be withdrawn from locatable mineral entry.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Open - The Shooting Gallery ACEC would be open to fire management (vegetation would be managed in such a way as to protect the rock art from fire damage).
- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Limited – Livestock within the ACEC would be controlled through terms and conditions of the grazing permit as to protect the resources (rock art and archaeological features) from adverse livestock impacts.

- Fuel Wood Cutting: Open.

Alternative C

Same as Alternative B.

Alternative D

Same as Alternative A.

Alternative E

Same as Alternative B.

Shoshone Ponds ACEC Management Actions/Alternatives

Alternative A

This area would continue under current management.

Alternative B

The following special management would be required to protect the relevant and important values for the Shoshone Ponds ACEC. The special management actions for this ACEC include:

- ACEC acres: 1,240 acres.
- Rights-of-Way: Exclusion area; rights-of-way would not be granted within the area.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Classes I and II.
- Plant Collection: Closed.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: Closed.

2.0 ALTERNATIVES

- Locatable Mineral: Closed.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Limited.
- Transportation: Limited. No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Limited.
- Fuel Wood Cutting: Closed.

Alternative C

Same as Alternative B.

Alternative D

Same as Alternative A.

Alternative E

Same as Alternative B.

Snake Creek Indian Burial Cave ACEC Management Actions/ Alternatives

Alternative A

The Snake Creek Indian Burial Cave would not be designated as an ACEC and management would continue as at present with uses and impacts evaluated on a case-by-case basis. In 1970 the Snake Creek Indian Burial Cave was officially designated an Archaeological Site. This Archaeological Site was segregated from the public land laws, including the general mining laws, but not the Recreation and Public Purposes Act or the mineral leasing and material sales laws. This segregation only ensured that the Snake Creek Indian Burial Cave would remain in public ownership. The purpose of the 1970 designation was to protect archaeological values.

- Rights-of-Way: Open
- Off-highway Vehicles: Open
- Visual Resource Management: Visual Resource Management Class III
- Plant Collection: Open

- Road Maintenance: Open
- Leasable Minerals: No surface occupancy
- Locatable Minerals: Open
- Saleable Minerals: Open
- Lands: Open
- Fire Management: Open
- Transportation: Open
- Livestock Management: Open
- Fuel Wood Cutting: Open

Alternative B

The following special management would be required to protect the relevant and important values for the Snake Creek Indian Burial Cave ACEC. The special management actions for this ACEC include:

- ACEC acres: 40 acres.
- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Class II.
- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: Closed.
- Locatable Mineral: Closed and recommended to be withdrawn from locatable mineral entry.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Open – The Snake Creek Indian Burial Cave ACEC would be open to fire management (vegetation would be managed in such a way as to protect the cave from fire damage).

2.0 ALTERNATIVES

- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Open.
- Fuel Wood Cutting: Open.

Alternative C

Same as Alternative B.

Alternative D

Same as Alternative A.

Alternative E

Same as Alternative B.

Swamp Cedar ACEC Management Actions/Alternatives

Alternative A

This area would continue under current management.

Alternative B

The following special management would be required to protect the relevant and important values for the Swamp Cedar ACEC. The special management actions for this ACEC include:

- ACEC acres: 3,200 acres.
- Rights-of-Way: Valid existing rights would remain in effect.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Classes I and II.
- Plant Collection: Closed.

2.5 Management Direction for Resource Programs

- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: No surface occupancy.
- Locatable Mineral: Closed.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Limited.
- Transportation: Limited. No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Open.
- Fuel Wood Cutting: Closed.

Alternative C

Same as Alternative B.

Alternative D

Same as Alternative A.

Alternative E

Same as Alternative B, with the exception that the area would be open to mineral leasing, subject to stipulations.

Ward Mining District ACEC Management Actions/Alternatives

Alternative A

Ward Mining District would not be designated as an ACEC and management would continue as at present with uses and impacts evaluated on a case-by-case basis.

- Rights-of-Way: Open
- Off-highway Vehicles: Open

2.0 ALTERNATIVES

- Visual Resource Management: No visual resource management inventory has been done in this area
- Plant Collection: Open
- Road Maintenance: Open
- Leasable Minerals: Open
- Locatable Minerals: Open
- Saleable Minerals: Open
- Lands: Open
- Fire Management: Open
- Transportation: Open
- Livestock Management: Open
- Fuel Wood Cutting: Open

Alternative B

The following special management would be required to protect the relevant and important values for the Ward Mining District ACEC. The special management actions for this ACEC include:

- ACEC acres: 11,000 acres.
- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Class II.
- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: Open with special stipulations.
- Locatable Mineral: Closed and recommended to be withdrawn from locatable mineral entry.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.

2.5 Management Direction for Resource Programs

- Fire Management: Open – The Ward Mining District ACEC would be open to fire management (vegetation would be managed in such a way as to protect the townsite, cemetery, and other historic resources from fire damage).
- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Closed.
- Fuel Wood Cutting: Closed.

Alternative C

The following special management would be required to protect the relevant and important values for the Ward Mining District ACEC. The special management actions for this ACEC include:

- ACEC acres: 3,000 acres.
- Rights-of-Way: Exclusion area; rights-of-way would not be granted within the area.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Class II.
- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: Closed.
- Locatable Mineral: Closed and recommended to be withdrawn from locatable mineral entry.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.
- Fire Management: Open – The Ward Mining District ACEC would be open to fire management (vegetation would be managed in such a way as to protect the townsite, cemetery, and other historic resources from fire damage).

2.0 ALTERNATIVES

- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Closed.
- Fuel Wood Cutting: Closed.

Alternative D

Same as Alternative A.

Alternative E

The following special management would be required to protect the relevant and important values for the Ward Mining District ACEC. The special management actions for this ACEC include:

- ACEC acres: 2,500 acres.
- Rights-of-Way: Avoidance area; granting new rights-of-way (surface, subsurface, aerial) within the area should be avoided, but rights-of-way may be granted if there is minimal conflict with the identified resource values and impacts can be mitigated.
- Off-highway Vehicles: Use would be limited to designated roads and trails.
- Visual Resource Management: The visual resource management class for this ACEC would be Class II.
- Plant Collection: Plant materials, including common species, may be collected by permit only.
- Road Maintenance: Maintenance would be limited to the designated roadway; shoulder barrow/ditch construction would be limited to only that necessary to ensure public safety and serviceability of the road.
- Leasable Minerals: Open, subject to stipulations.
- Locatable Mineral: Open.
- Saleable Minerals: Closed.
- Lands Disposals: No disposals and recommended to be withdrawn from surface entry.

2.5 Management Direction for Resource Programs

- Fire Management: Open – The Ward Mining District ACEC would be open to fire management (vegetation would be managed in such a way as to protect the townsite, cemetery, and other historic resources from fire damage).
- Transportation: No new roads would be constructed within the ACEC unless determined necessary in the ACEC management plan.
- Livestock Management: Open.
- Fuel Wood Cutting: Open.

2.5.22.2 Back Country Byways

Management Common to All Alternatives

The Mount Wilson Back Country Byway would be retained.

Alternative A

No additional Back Country Byways would be designated (see **Map 2.4-56**).

Alternative B

In addition to the existing Back Country Byway, the Silver State Trail would be designated as a Back Country Byway (see **Map 2.4-57**).

Alternative C

In addition to the existing Back Country Byway, Rainbow Canyon and the Silver State Trail would be designated as Back Country Byways (see **Map 2.4-58**).

Alternative D

Same as Alternative A.

Alternative E

Same as Alternative C (see **Map 2.4-57**).

2.0 ALTERNATIVES

2.5.22.3 Designated Wilderness

Management Common to All Alternatives

Fifteen designated wilderness areas would be managed in accordance with the Wilderness Act of 1964; the Nevada Wilderness Protection Act of 1989; the Lincoln County Conservation, Recreation, and Development Act of 2004; the 6300 Wilderness Management Regulations; and wilderness management policy and guidance. No additional management direction is necessary for this category.

2.5.22.4 Wilderness Study Areas

Wilderness Study Areas are managed under the Interim Management Policy for Lands Under Wilderness Review until such time as Congress makes a determination regarding wilderness designations. The BLM would not designate new wilderness study areas through the land use planning process. Lands identified as having wilderness characteristics may still be managed to protect those characteristics through a variety of other land use plan decisions such as establishing visual resource management class objectives to preserve the existing landscape; attaching conditions to permits, leases, and other authorizations; and establishing limited or closed off-highway vehicle designations. Lands released from Wilderness Study Area designation by Congress would be managed in the same manner as surrounding lands. Management procedures for special designation areas such as scenic areas, geologic areas, natural areas, research natural areas, rockhound areas, and antiquities areas that are retained within Wilderness Study Area boundaries would be managed under the Interim Management Policy for Lands Under Wilderness Review. In the event that lands released from Wilderness Study Area designation are protected under some other special designation, those lands would retain those protections (e.g., ACECs within a Wilderness Study Area). Wilderness Study Area lands not retained under some other special designation would be released for other purposes and uses. These other special designations are not a substitute for wilderness designation but provide specific management prescriptions to protect important resources.

Alternative A

Only those designated wilderness study areas are managed to preserve wilderness characteristics.

Alternative B

Other multiple uses would be emphasized while management restrictions would be applied to reduce impacts to some or all of the wilderness characteristics outside of designated wilderness or Wilderness Study Areas.

Alternative C

Other multiple uses would be emphasized as a priority over protecting wilderness characteristics outside of designated wilderness or Wilderness Study Areas.

Alternative D

The protection of some, or all, of the wilderness characteristics outside of designated wilderness or wilderness study areas would be emphasized as a priority over other multiple uses through means other than designating as a Wilderness Study Area.

Alternative E

Same as Alternative B.

2.5.22.5 Other Special Designations

This section describes management alternatives for special designations other than those described in the previous subsections. These other special designations include scenic areas, geologic areas, natural areas, research natural areas, rockhound areas, and antiquities areas.

Management Common to All Alternatives

1. Any special designation areas would be managed within released Wilderness Study Areas under their specific management prescriptions. The following special designation areas occur within Wilderness Study Areas: North Creek, Mount Grafton, Goshute Cave, Leviathan Cave, Whipple Cave, and Goshute Canyon. These areas have been designated to preserve their unique recreational, historical, archeological, geological, and natural features. Should the Wilderness Study Areas be released from further consideration of wilderness, these special designation areas would continue to be managed under their special management provisions.
2. Management procedures for the special designation areas that are retained would be the same; these include scenic areas, geologic areas, natural areas, research natural areas, rockhound areas, and antiquities areas.
3. No herd management areas are recommended for designation as wild horse ranges.

Alternative A

No existing special designation areas would be changed, and no existing special designation areas would be designated as ACECs.

The following 23 existing special designation areas, totaling 34,495 acres, would be retained under their current designations.

- Scenic Areas: Blue Mass, North Creek, Kious Spring, Mount Grafton, and Weaver Creek.
- Geologic Areas: Goshute Cave, Leviathan Cave, Whipple Cave, and Cave Valley Cave.

2.0 ALTERNATIVES

- Rockhounding Area: Garnet Hill.
- Natural Areas: Goshute Canyon, Shoshone Ponds, and Swamp Cedar.
- Research Natural Areas: Pygmy Sage and Heusser Bristlecone.
- Antiquities or Archaeological Sites: Snake Creek Indian Burial Cave, Rock Animal Corral, Baker Creek, Baker, Bat Cave Guano Mine, Garrison, White River Petroglyph, and Mount Irish.

The following management procedures would apply to all the above special designation areas.

- Roads – BLM would not build new or maintain existing roads unless deemed absolutely necessary for management of natural values. Likewise, BLM would not allow the building or maintenance of roads.
- Structures – BLM would not build, or allow to be built, any type of structure except 1) those already identified in existing habitat management plans, or 2) those deemed absolutely necessary for management of natural values.
- Range Improvements – Land treatment projects would be prohibited. Other projects that would cause undue soil disturbance also would be prohibited.
- Livestock Grazing – Livestock grazing management would be used as a tool to enhance desirable vegetation composition.
- Fire Control – Fire control would be confined to the use of hand crews unless otherwise deemed necessary by the Ely Field Manager.
- All personnel would assist the Ely Field Manager by identifying and reporting actions of private individuals or organizations that adversely affect the natural values.

The following 17 areas, totaling 12,705 acres, would be segregated from disposal under the public land laws, including the general mining laws, but not the Recreation and Public Purposes Act or the mineral leasing and material sale laws: Goshute Cave, Leviathan Cave, Goshute Canyon, Blue Mass Canyon, Shoshone Ponds, Bat Cave Guano Mine, Kious Spring, Snake Creek Indian Burial Cave, Rock Animal Corral, Baker Creek, Baker, Garrison, White River Petroglyphs, Whipple Cave, Cave Valley Cave, Heusser Bristlecone, and Pygmy Sage.

The following three areas, totaling 2,490 acres, would be segregated from disposal under the public land laws, but not the general mining laws, the Recreation and Public Purposes Act, or the mineral leasing and material sale laws: Weaver Creek, Garnet Field, and Mount Irish.

Alternative B

The following three special designations, totaling 1,810 acres, would be retained:

- Antiquities or Archaeological Sites – Garrison, White River Petroglyph
- Rockhounding Area – Garnet Hill

The following management procedures would apply to all the above special designation areas.

- Roads – BLM would not build new or maintain existing roads unless deemed absolutely necessary for management of natural values. Likewise, BLM would not allow the building or maintenance of roads.
- Structures – BLM would not build, or allow to be built, any type of structure except: 1) those already identified in existing habitat management plans or 2) those deemed absolutely necessary for management of natural values.

The following 12 special designation areas would be designated as ACECs:

- Scenic Areas – Blue Mass, Mount Grafton and North Creek (combined)
- Natural Areas – Goshute Canyon, Shoshone Ponds, Swamp Cedar
- Research Natural Areas – Huesser Bristlecone
- Antiquities or Archaeological Sites – Bat Cave – Guano Mine, Snake Creek Indian Burial Cave, Baker, Rock Animal Corral, Mount Irish

These areas total 30,530 acres. An additional 3,140 acres near Rock Animal Corral and an additional 25,560 acres near Mount Irish also would be included as part of those ACECs, respectively.

The following eight special designation areas, totaling 2,155 acres would be dropped:

- Scenic Areas – Kiou Spring, Weaver Creek
- Geologic Areas – Goshute Cave, Leviathan Cave, Cave Valley Cave, Whipple Cave
- Research Natural Areas – Pygmy Sage
- Antiquities or Archaeological Sites – Baker Creek

The following 12 areas, totaling 11,630 acres, would be segregated from disposal under the public land laws, including the general mining laws but not the Recreation and Public Purposes Act or the mineral leasing and material sale laws: Goshute Cave, Leviathan Cave, Goshute Canyon, Blue Mass, Shoshone Ponds, Baker Creek, Garrison, White River Petroglyphs, Whipple Cave, Cave Valley Cave, Heusser Bristlecone, and Pygmy Sage.

The following area, totaling 1,210 acres, would be segregated from disposal under the public land laws, but not the general mining laws, the Recreation and Public Purposes Act or the mineral leasing and material sale laws: Garnet Hill.

2.0 ALTERNATIVES

Alternative C

The following two special designations, totaling 600 acres would be retained:

- Antiquities or Archaeological Sites – Garrison, White River Petroglyph

The following management procedures would apply to all the above special designation areas.

- Roads – BLM would not build new or maintain existing roads unless deemed absolutely necessary for management of natural values. Likewise, BLM would not allow the building or maintenance of roads.
- Structures – BLM would not build, or allow to be built, any type of structure except: 1) those already identified in existing habitat management plans or 2) those deemed absolutely necessary for management of natural values.

The following 14 special designation areas would be designated as ACECs:

- Scenic Areas – Blue Mass, Mount Grafton and North Creek (combined)
- Rockhounding Area – Garnet Hill
- Natural Areas – Goshute Canyon, Shoshone Ponds, Swamp Cedar
- Research Natural Areas – Huesser Bristlecone, Pygmy Sage
- Antiquities or Archaeological Sites – Bat Cave Guano Mine, Snake Creek Indian Burial Cave, Baker, Rock Animal Corral, Mount Irish

These areas total 31,900 acres. An additional 3,140 acres near Rock Animal Corral and an additional 25,560 acres near Mount Irish also would be included as part of those ACECs, respectively.

The following seven special designation areas, totaling 1,995 acres, would be dropped:

- Scenic Areas – Kious Spring, Weaver Creek
- Geologic Areas – Goshute Cave, Leviathan Cave, Cave Valley Cave, Whipple Cave
- Antiquities or Archaeological Sites – Baker Creek

The following 12 areas, totaling 11,630 acres, would be segregated from disposal under the public land laws, including the general mining laws but not the Recreation and Public Purposes Act or the mineral leasing and material sale laws: Goshute Cave, Leviathan Cave, Goshute Canyon, Blue Mass, Shoshone Ponds, Baker Creek, Garrison, White River Petroglyphs, Whipple Cave, Cave Valley Cave, Heusser Bristlecone, and Pygmy Sage.

The following area, totaling 1,210 acres, would be segregated from disposal under the public land laws, but not the general mining laws, the Recreation and Public Purposes Act or the mineral leasing and material sale laws: Garnet Hill.

Alternative D

All of the 23 special designations, totaling 34,495 acres, would be dropped and none would be withdrawn from disposal:

Garrison
Bat Cave Guano Mine
Baker
Mount Irish
Mount Grafton
Goshute Canyon
Swamp Cedar
Pygmy Sage
Kious Spring
Goshute Cave
Cave Valley Cave
Whipple Cave

White River Petroglyph
Snake Creek Indian Burial Cave
Rock Animal Corral
Blue Mass
North Creek
Shoshone Ponds
Huesser Bristlecone
Garnet Hill
Weaver Creek
Leviathan Cave
Baker Creek

Alternative E

Same as Alternative B.

2.5.22.6 Monitoring of Special Designations

Collate existing base information and develop additional baseline inventories of plant communities following Research Natural Areas: Baseline Monitoring and Management (U.S. Forest Service 1984). Periodically monitor the impacts of management actions on resource values, including the health of plant community cells. This would be done using such techniques as photo points, line intercept transects, ocular surveillance, study plots, and value points.

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How to Read Chapter 3.0

Chapter 3.0 provides background information on the various resources, resource uses, and programs managed by the Ely Field Office, and describes their existing conditions, trends, and current management. These subsections contain the following information:

- Existing Conditions – description of each resource, resource use, or program.
- Trends – description of the direction of the changes that are occurring in the existing conditions.
- Current Management – description of how the Ely Field Office is currently managing the resource, resource use, or program.

This format does not lend itself equally well to every resource, resource use, or program. Where a subsection is not applicable (e.g., trends for special designations), this is noted in the text.

NEPA regulations require that an EIS contain a description of the environmental conditions that would be affected by the alternatives being analyzed. Thus rather than being encyclopedic, the Affected Environment chapter must focus on those resources and uses that would be impacted by the management direction presented in Chapter 2.0 for Alternatives A through E.

The amount of quantitative information that is available to describe existing conditions and particularly trends varies from resource to resource. In general, resources that have formal administrative requirements, such as livestock grazing, have more quantitative information available than resources that are used casually, such as recreation. Where quantitative information is available, it is reflected in the existing conditions and trends descriptions. Where it is not available, the descriptions rely on the observational knowledge of the District developed by the Ely Field Office staff.

All maps referenced in Chapter 3.0 are presented in the separate Map Volume.

3.1 Introduction

Approximately two thirds of the Ely District lies within a geographical region called the Great Basin. The vast, visually monotonous areas of sagebrush and salt desert shrublands have a tendency to cloak the great diversity that exists in these ecological systems. Some biologists also have erroneously concluded that the area has relatively low biological diversity (Ehrlich et al. 1988); however, the District exemplifies much biological diversity across its basin and range topography. The large variety of plant species has resulted in an abundance of habitats, which are also reflected in the soils and their distribution on the District. Soils can indicate the natural mosaic in a landscape or watershed as the complex geology, climate, topography, vegetation, and time work together as factors of soil formation.

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Soil surveys are inventories of soils that indicate their spatial distribution. As an example, **Map 3.1-1** shows the distribution of soil mapping units in Egan Basin, a small watershed on the Ely District. The soil map unit descriptions indicate where soils occur within map unit polygons and in what percentages they occur. Soil map unit descriptions also explain the relationship of soil types to their correlating plant communities.

By designing landscape projects within the capabilities of the soils, we are able to:

- Initiate watershed restoration using the adaptive management model and best available science.
- Develop strategies and implement actions to restore landscapes to an ecologically functioning condition.
- Address vegetation communities in terms of thresholds within the landscape with respect to vegetation state and transition pathways.
- Have negligible adverse effects on soils.
- Develop local watershed analyses based on ecological site potential.
- Identify where current roads and trails may not be suited to the soil potentials and suggest a better alignment or configuration.

RMP Management Focus

The restoration and maintenance of healthy ecological systems within watersheds is a primary focus for the future management of the Ely District. Healthy ecological systems are geographically diverse and change over time. They are compatible with soil potential and are resilient to disturbance.

Resources and resource uses will be managed to restore or maintain ecological health. Certain resource management changes and active treatments may need to be implemented, in portions of watersheds, to accomplish this objective. Adaptive management will be pursued to avoid deteriorating conditions favoring invasive plants and catastrophic fires. Any projects will be implemented so as to result in a mosaic of vegetation within a watershed.

In the long term, natural disturbance (such as drought or fire) will occur and fewer treatments will be needed to maintain ecological health. The result will be a variety of vegetation phases within a watershed, which will provide diverse, healthy conditions for future generations.

3.2 Air Quality and Climate**3.2.1 Existing Conditions****Air Quality**

The current condition of air quality in the Ely District is good, relative to other areas of the nation. The air resource is primarily affected by particulate matter produced by land management activities or natural events on federally-administered lands, including wildfire, prescribed burning, road or wind-blown dust, construction, mining, and vehicle use. Of these emission sources, most of the particulate matter of concern is produced from wildfires. Smoke emissions consist mostly of particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}), as well as fine particulates with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$). According to Sisler et al. (1996), on a national level, the lowest concentrations of fine particulates occur in the Great Basin in Nevada. In other parts of the nation, the largest mass fractions of the fine aerosol are sulfate and organics; however, organic carbon (presumably from wildland burning) is the largest single component in the Great Basin (Sisler et al. 1996).

Climatology and Meteorology

Most of the District is internally drained and surface runoff is confined to the basins. A few drainages in the southern part of the District in Lincoln County drain into the Virgin River. Those drainages are, from west to east, Coyote Spring Valley, Meadow Valley Wash, and Toquop Wash. The White River Valley, which is located on the eastern edge of Nye County and extends into White Pine County, drains into the Coyote Spring drainage. The Virgin River drains into the Colorado River at Lake Mead, south of the Ely Districts southern boundary.

The Ely District is located in the center of the Great Basin. Terrain is internally and externally drained. External drainage is south to the Colorado River. Otherwise, valley drainage is typical of the Great Basin and is covered with a variety of desert shrubs and grasses. The terrain consists of alternating mountain ranges and valleys primarily situated in the Basin and Range physiographic province. The southern portions of the District are more arid and consist of mixed aggraded desert plains situated between elevated terrain in north-south oriented mountain ranges. Elevations in the southern part of the District range from approximately 2,000 to more than 7,400 feet above mean sea level.

Baseline meteorology, air quality, and dispersion conditions for the Ely District were characterized by data collected at the Ely airport starting in 1948 and continuing through the present. Data from Caliente were used to characterize the climate in the aggraded desert plains in the southern portions of the District. The climate in the northern portion of the Ely District is classified as a cool semi-arid steppe, and the southern portion of the Ely District is classified as a hot arid desert. The climate is characterized by low rainfall, low humidity, clear skies, and relatively large annual and diurnal temperature ranges (Brown 1974).

Because of the typically dry atmosphere, bright sunny days and clear nights frequently occur. This in turn allows rapid heating of the ground surface during daylight hours and rapid cooling at night. The average

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range between the highest and the lowest daily temperatures is about 30 to 35 degrees Fahrenheit. Daily ranges are larger in summer than the winter. Since heated air rises and cooled air sinks, winds tend to blow upslope during the day and downslope at night. This up-slope and down-slope cycle generally occurs in all the geographical features, including mountain range slopes and river courses. The larger the horizontal extent of the feature, the greater the volume of air that moves in the cycle. Terrain diversity causes complex movements in the cyclic air patterns, with thin layers of moving air embedded within the larger scale motions. The low-level, thermally driven winds also are embedded within larger scale upper wind systems (synoptic winds). Synoptic winds in the region are predominantly west to east, are characterized by daily weather variations that enhance or diminish the boundary layer winds, and are substantially channeled by regional and local topography.

Atmospheric Dispersion

The most important meteorological factors that influence the dispersion of pollutants in the atmosphere are mixing height, wind speed, wind direction, and stability. Mixing height is the thickness of the layer of air above ground within which rising warm air from the surface would mix by convection and turbulence. Local atmospheric conditions, terrain configuration, and source location determine the degree to which pollutants are diluted in this mixed layer. Mixing heights vary diurnally, with local weather systems, and with season. For the RMP area, the mean annual morning mixing height is estimated to be approximately 980 feet, and the mean annual afternoon mixing height is approximately 7,800 feet (Holzworth 1972).

Winds

The Ely District is located at a latitude that places it within the belt of prevailing westerly winds that circle the globe around the earth's northern hemisphere. However, much of the area consists of complex terrain where the winds are affected by local topographic features. This is evident in the wind data collected at the Ely airport that show prevailing winds are from the south during all months of the year. Wind speed has an important effect on area ventilation and the dilution of pollutant concentrations from individual sources. Light winds, in conjunction with large source emissions, may lead to an accumulation of pollutants that can stagnate or move slowly to downwind areas. During stable conditions, downwind usually means down valley or toward lower elevations. Wind speeds are most frequently observed in the 5- to 10-mile per hour range and the annual average wind speed at Ely is 10.3 miles per hour.

Temperature

Observed normal temperatures at Ely range from the teens to upper 30s (degrees Fahrenheit) in winter and from nearly 50 to the upper 80s (degrees Fahrenheit) in summer (Western Region Climate Center 2003). **Figure 3.2-1** depicts average, maximum, and minimum normal temperatures and precipitation at Ely measured during the period of record 1971 to 2000. At Caliente, average maximum temperatures for all seasons are about 5 to 10 degrees warmer than Ely. **Figure 3.2-2** depicts average, maximum, and minimum normal temperatures and precipitation at Caliente measured during the period of record 1971 to 2000. Summer conditions in the area are typically hot and dry except in the higher mountain ranges.

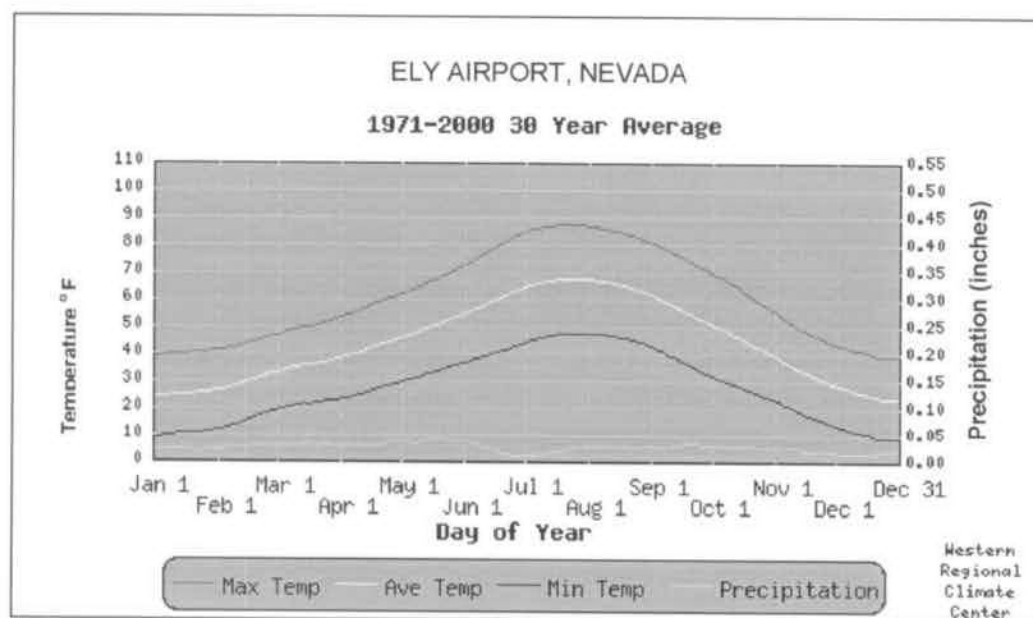


Figure 3.2-1. Climate Data for Ely, Nevada

Precipitation is spread throughout the year, and much of the annual precipitation results from spring snow storms and summer convective thunderstorms. The average total annual precipitation measured is slightly less than 10 inches of water equivalent.

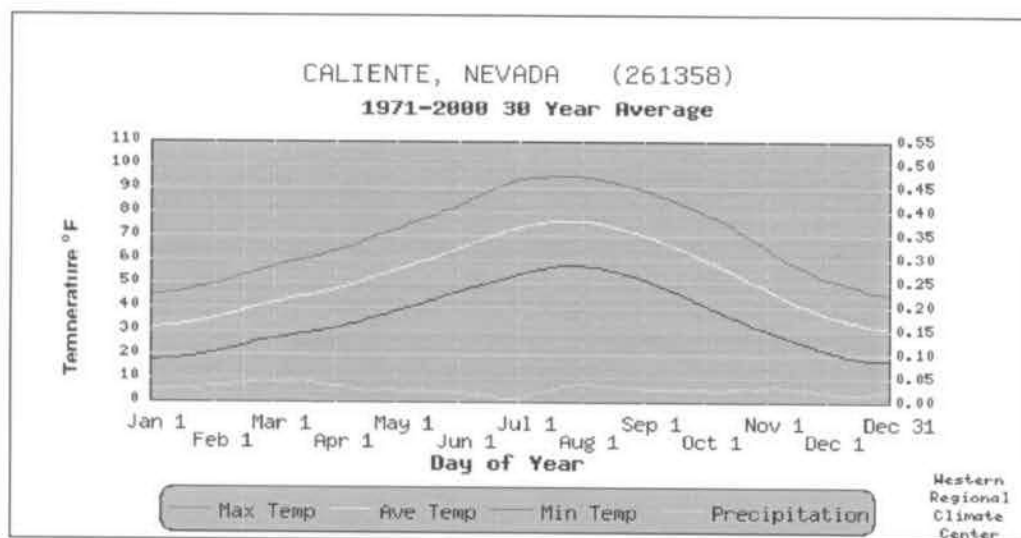


Figure 3.2-2. Climate Data for Caliente, Nevada

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Stability

Morning atmospheric stability conditions tend to be stable because of the rapid cooling of the layers of air nearest the ground. Afternoon conditions, especially during the warmer months, tend to be neutral to unstable because of the rapid heating of the surface under clear skies. During the winter, periods of stable afternoon conditions may persist for several days in the absence of synoptic scale storm systems to generate higher winds with more turbulence and mixing. A high frequency of inversions at lower elevations during the winter can be attributed to the nighttime cooling and sinking air flowing from higher elevations to the low lying areas in the basins. Although winter inversions generally are quite shallow, they tend to be more stable because of reduced surface heating.

Precipitation

Nevada lies on the eastern, lee side of the Sierra Nevada Range, a massive mountain barrier that markedly influences the climate of the state. One of the greatest contrasts in precipitation found within a short distance in the U.S. occurs between the western slopes of the Sierras in California and the valleys just to the east of this range. The prevailing winds are from the west, and as the warm moist air from the Pacific Ocean, ascends the western slopes of the Sierra Range, the air cools, condensation takes place, and most of the moisture falls as precipitation. As the air descends the eastern slope, it is warmed by compression and very little precipitation occurs. The effects of this mountain barrier are felt not only in the west but throughout the state, with the result that the lowlands of Nevada are largely desert or steppes.

A summer precipitation maximum occurs in the eastern portion of the state where thunderstorms are most frequent. Precipitation is lightest over the southern portions of the Ely District where the average annual precipitation is less than 5 inches. In eastern Nevada, precipitation increases to 18 inches in Lamoille Canyon on the western side of the Ruby Mountains. In Ely and Caliente, the average annual precipitation is just under 10 inches during the period of record (1971-2000) (Western Region Climate Center 2003). Variations in precipitation are due mainly to differences in elevation and exposure to precipitation-bearing storms. The average annual number of days with precipitation of 0.01 inch or more varies considerably; Las Vegas averages 23, Reno 49, Winnemucca 67, Caliente 46, Ely 72, and Elko 78. Higher elevations in the Ely District would have more frequent precipitation events and would receive more annual rainfall than either Ely or Caliente.

Floods

Mountain snowfall forms the main source of water for stream flow. Melting of the mountain snow pack in the spring usually causes some flooding in northern and western streams during April to June, but damaging floods of this type are infrequent. However, extensive flooding from melting of heavy snow pack has occurred in both the southern and northern parts of the state. Flooding also can be caused by a combination of warm rains and melting snow, especially in the western section. Heavy summer thunderstorms occasionally cause flooding of local streams, but they usually occur in sparsely settled mountainous areas. These storms, locally termed cloudbursts, may bring to a locality as much rain in a few hours as would normally fall in several months.

Severe Storms

Thunderstorms in most areas of the state are infrequent, with the average annual number of days, during the period of record being 13 at Reno, 15 at Las Vegas and Winnemucca, 21 at Elko, and 33 at Ely (Western Region Climate Center 2003). So the number and intensity of thunderstorms is greater in eastern portions of the state, and lightning caused wildfires would be more likely in the Ely District than in most other areas of the state. Tornadoes are rare, but have occurred in all months from April through September (Western Region Climate Center 2003). Winds are generally light. Storms with high winds rarely occur and seldom cause appreciable damage, except locally along the east slope of the Sierras.

3.2.2 Trends

Air Quality

Emissions from wildland fires have occurred in the planning area ecological systems for thousands of years. Wildfires substantially affect the air resource. Current wildfires produce higher levels of smoke emissions than historical fires, because fuel available to be consumed by wildfire has increased. Within the Ely District, the current trend in increased prescribed fire use also is expected to result in an increase of smoke emissions, although over shorter time periods.

3.2.3 Current Management

Regulatory Framework

The Clean Air Act, originally enacted in 1955 by Congress and amended several times since then, is the primary legal instrument used to regulate and protect air quality. The Clean Air Act requires the U.S. Environmental Protection Agency to, among other things, identify and publish a list of common air pollutants that could endanger public health or welfare. These commonly encountered pollutants, referred to as "criteria pollutants," are listed by the U.S. Environmental Protection Agency along with the results of studies documenting the health effects of various concentrations of each pollutant. For each criteria pollutant, the U.S. Environmental Protection Agency has designated a concentration level above which the pollutant would endanger public health or welfare. These levels are called the National Ambient Air Quality Standards. To date, the National Ambient Air Quality Standards have been established for six criteria pollutants:

- Sulfur dioxide;
- Particulate matter (PM₁₀ and PM_{2.5});
- Carbon monoxide;
- Ozone;
- Nitrogen dioxide; and
- Lead.

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Except in certain developed urban and industrial areas, these standards are not typically violated where the general public has access throughout the entire nation.

If National Ambient Air Quality Standards are violated in an area, the area is designated as a "nonattainment area," and the state is required to develop an implementation plan to bring it back into compliance with these standards. The Clean Air Act and the Federal Land Policy and Management Act of 1976 require that actions conducted or approved by BLM comply with all applicable local, state, Tribal, and federal air quality requirements. Pollutants such as oxides of nitrogen and sulfur are of concern to federal land managers because of their potential to cause adverse effects on plant life, water quality, and visibility. However, the sources of these pollutants generally are associated with urbanization and industrialization rather than with natural resource management activities. Therefore, these pollutants will not be considered further in this RMP/EIS. However, particulates, ozone, and carbon monoxide are criteria pollutants that can be created by fire; these pollutants are discussed in this RMP/EIS. The pollutant of greatest concern for management activities in the Ely District is particulate matter. Three elements of the Clean Air Act generally apply to management activities that produce emissions in the planning area:

- Protection of National Ambient Air Quality Standards (Section 109);
- Conformity with State Implementation Plans (Section 176[c]); and
- Protection of Visibility in Class I Areas (Section 169A).

Because fire and smoke are a natural part of forestland and rangeland ecological systems, particulate matter produced from fire does not seriously affect these ecological systems. However, it does have effects on human health. Particulate matter (PM₁₀ and PM_{2.5}) can be drawn deep into the alveolar region of the lungs, the part of the respiratory system most sensitive to chemical injury. Wood smoke also contains certain carcinogenic compounds, including poly-aromatic hydrocarbons.

Air Quality

Air quality is: 1) dependent on the amount and character of air pollutant emissions, climatology including dispersion conditions, and topography; 2) interpreted as specific pollutant concentrations for specific time periods; and 3) evaluated for potential harm to public health and welfare, based on scientifically defined criteria. Measurement of pollutants in the atmosphere is expressed in units of parts per million or micrograms per cubic meter. Both long-term climatic factors and short-term weather fluctuations are considered part of the air quality resource because they control dispersion and affect concentrations. Physical effects of air quality depend on the characteristics of the receptors and the type, amount, and duration of exposure. Air quality standards specify acceptable upper limits of pollutant concentrations and duration of exposure. Air pollutant concentrations below the standards are not considered detrimental to public health and welfare.

The relative importance of pollutant concentrations can be determined by comparison with an appropriate national and/or state ambient air quality standard. National and state ambient air quality standards are presented in **Table 3.2-1**. These are the standards applicable to Nevada and the Ely District. An area is designated by the U.S. Environmental Protection Agency as being in attainment for a pollutant if ambient

**Table 3.2-1
Ambient Air Quality Standards Applicable in the Ely District**

Pollutant	Averaging Time	Nevada Standards ¹		National Standards ²		
		(parts per million)	(micrograms per cubic meter)	Primary ^{3,4} (parts per million)	(micrograms per cubic meter)	Secondary ^{3,5}
Ozone	1 hour	0.12	235	0.12	235	Same as primary
	8 hour	0.08	157	0.08	157	Same as primary
Carbon monoxide (less than 5,000 feet above mean sea level)	8 hours	9	10,000	9	10,000	None
Carbon monoxide (at or greater than 5,000 feet above mean sea level)	8 hours	6	6,670	NA	NA	
Carbon monoxide (at any elevation)	1 hour	35	40,000	35	40,000	
Nitrogen dioxide	Annual arithmetic mean	0.053	100	0.053	100	Same as primary
Sulfur dioxide	Annual arithmetic mean	0.03	80	0.03	80	None
	24 hours	0.14	365	0.14	365	
	3 hours	0.5	1,300	--	--	0.5 parts per million (1,300 micrograms per cubic meter)
PM ₁₀	Annual arithmetic mean	--	50	--	50	Same as primary
	24 hours	--	150	--	150	--
PM _{2.5}	Annual arithmetic mean	--	15	--	15	Same as primary
	24 hours	--	65	--	65	
Lead	Quarterly arithmetic mean	--	1.5	--	1.5	Same as primary
Visibility	Observation		In sufficient amount to reduce the prevailing visibility ⁶ to less than 30 miles when humidity is less than 70 percent	--	--	--
Hydrogen sulfide	1 hour	0.08	112	--	--	--

¹These standards must not be exceeded in areas where the general public has access.

²These standards, other than for ozone, particulate matter, and those based on annual averages, must not be exceeded more than once per year. The 1-hour ozone standard is attained when the expected number of days per calendar year with a maximum hourly average concentration above the standard is equal to or less than one. The 24-hour standard for PM₁₀ is attained when the expected number of days per calendar year with a 24-hour average concentration above the standard, rounded to the nearest 10 micrograms per cubic meter, is equal to or less than one. The expected number of days per calendar year is generally based on an average of the number of times the standard has been exceeded per year for the last 3 years.

³Where applicable, concentration is expressed first in units in which it was adopted. All measurements of air quality that are expressed as mass per unit volume, such as micrograms per cubic meter, must be corrected to a reference temperature of 25 degrees Celsius and a reference pressure of 760 millimeters of mercury (1,013.2 millibars); parts per million in this table refers to parts per million by volume, or micromoles of regulated air pollutant per mole of gas.

⁴National primary standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health.

⁵National secondary standards are the levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a regulated air pollutant.

⁶For the purposes of this section, prevailing visibility means the greatest visibility which is attained or surpassed around at least half of the horizon circle, but not necessarily in continuous sectors.

⁷The ambient air quality standard for hydrogen sulfide does not include naturally occurring background concentrations.

Source: Nevada Administrative Code NAC 445B 22097 Standards of quality for ambient air (NRS 445B 210, 445B 300).

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concentrations of that pollutant are below the National Ambient Air Quality Standards. An area is not in attainment if violations of National Ambient Air Quality Standards for that pollutant occur. Areas where insufficient data are available to make an attainment status designation are listed as unclassifiable and are treated as being in attainment for regulatory purposes. A maintenance area is a former nonattainment area that has improved to the point where ambient air quality standard violations no longer occur.

The existing air quality of the Ely District is typical of the largely undeveloped regions of the western U.S. There are no monitoring networks currently measuring air quality in the Ely area. Monitors in the state and local programs are concentrated in population centers. Nonetheless, for the purposes of statewide regulatory planning, this area has been designated as in attainment for PM₁₀ and as unclassified for other criteria air pollutants. The region is designated as a Class II area under the Prevention of Significant Deterioration regulations. The Class II designation allows for moderate growth or some degradation of air quality within certain limits above baseline air quality. These limits include the National Ambient Air Quality Standards referred to above and shown in **Table 3.2-1** as well as other incremental limits set by the Nevada Department of Environmental Protection.

As natural air pollutant emission sources, wildfires are not subject to air quality regulations, whereas prescribed fires (including wildfire managed for natural resource purposes) are subject to applicable smoke management regulations, including permitting.

State Implementation Plans

The Clean Air Act requires each state to develop, adopt, and implement a State Implementation Plan to ensure that the National Ambient Air Quality Standards are attained and maintained for the criteria pollutants. These plans must contain schedules for developing and implementing air quality programs and regulations. State Implementation Plans also contain additional regulations for areas that have violated one or more of the National Ambient Air Quality Standards (nonattainment areas). The general conformity provisions of the Clean Air Act (Section 176[c]) prohibit federal agencies from taking any action within a nonattainment area that would cause or contribute to a new violation of the National Ambient Air Quality Standards, increase the frequency or severity of an existing violation, or delay the timely attainment of a standard. The federal conformity analysis and determination regulations are applicable for certain actions within either nonattainment or maintenance areas. Federal agencies are required to ensure that their actions conform to applicable State Implementation Plans. The U.S. Environmental Protection Agency developed and finalized criteria and procedures for demonstrating and ensuring conformity of federal actions to State Implementation Plans. However, as written, they apply only to federal actions that occur within nonattainment areas. As of the printing of this RMP/EIS, neither the Ely District nor national forest parcels within the planning area lie within nonattainment areas. Therefore, requirements of the conformity regulations do not apply to management actions proposed in this RMP/EIS. However, federal actions still must comply with the State Implementation Plans.

Visibility in Class I Areas

Congress, in the Clean Air Act, declared as a national goal "the prevention of any future, and the remedying of any existing, impairment of visibility in mandatory Class I federal areas which impairment results from manmade air pollution." Class I areas include designated wilderness areas of at least 5,000 acres or national parks of at least 6,000 acres that were in existence by August 7, 1977. The Clean Air Act also has enabled tribes to classify areas as Class I areas.

The entire Ely District is Prevention of Significant Deterioration Class II, and the nearest mandatory federal Prevention of Significant Deterioration Class I area is the Jarbidge Wilderness Area, located on the Nevada-Idaho border. Several Nevada designated wilderness areas (including Mount Moriah) were created after 1977, and therefore are not mandatory Prevention of Significant Deterioration Class I areas.

To assure protection of visibility in mandatory Class I areas, some states have adopted (or will adopt) visibility protection requirements as part of their State Implementation Plans, to limit the amount of air pollutant emissions that can take place (including prescribed fire emissions). However, the State Implementation Plan for Nevada does not currently include visibility protection requirements. Class I areas are subject to the most limiting restrictions regarding how much additional pollution can be added to the air. Fine particulate matter ($PM_{2.5}$) is the primary cause of visibility impairment. Emissions from wildfires and prescribed burning, which stay suspended for long time periods and distances, are typically in the 0.1 to 2.5 micron size class and reduce visibility.

Federal land managers have an obligation to complete smoke management reports and apply appropriate mitigation measures to reduce potential impacts on air quality. Managers use, although they are not limited to, available computer software to estimate fuel consumption, emissions, and smoke dispersion from prescribed burns.

3.3 Water Resources

3.3.1 Existing Conditions

Groundwater

Carbonate Rock Aquifer Province. Groundwater of the Carbonate Rock Aquifer Province is stored in ancient consolidated marine sediments, which underlie much of southern and eastern Nevada and extend into western Utah, eastern California, and southeastern Idaho (Dettinger et al. 1995). The carbonate rocks consist of thick discontinuous sequences of limestone and dolomite of Paleozoic age, underlain by clastic and crystalline rocks of Cambrian and Pre-Cambrian age. Some major springs found along faults, such as Murray Springs, may represent the surface expression of these deep carbonate aquifers. The extensive springs along the western side of Ruby Lake in northern White Pine County are another example of such springs. Currently the carbonate aquifer systems are not extensively utilized. The occurrence and availability of groundwater in the carbonate province varies with location and water quality generally is good.

Basin-Fill (alluvial) Aquifers. In Nevada, the Great Basin is divided into 14 closed or semi-closed hydrographic basins. Each hydrographic area in the region is underlain by a structural basin partially filled with clastic material eroded from adjacent mountains. These deposits form basin-fill aquifers that are bounded by the consolidated rocks of the structural basin. Most are connected hydraulically to adjacent or underlying carbonate-rock aquifers (Harill and Prudic 1998). Alluvial aquifers of the Great Basin typically consist of two distinct units: a deep older unit and a younger shallow aquifer separated by a clay layer of Pliocene age. These alluvial aquifers have a wide range of beneficial uses.

Table 3.3-1 summarizes water availability in the shallow alluvial aquifers of the Ely District. The perennial yield shown in **Table 3.3-1** identifies the water in shallow alluvial aquifers that can be withdrawn without creating substantial drawdown in the water table. The perennial yield generally is about equal to the estimated net annual recharge. The committed resources represent the total volume of permitted, certificated, and vested groundwater rights recognized by the Nevada Division of Water Resources in each basin (Nevada Division of Water Planning 1992).

Groundwater quality in shallow alluvial aquifers of the Ely District is highly variable (Thompson and Chappell 1984). Most basins have groundwater chemistry dominated either by calcium bicarbonate or sodium bicarbonate. Often, a basin will grade from calcium bicarbonate water along the mountain front recharge area to sodium bicarbonate water in the interior of the basin. Springs in the alluvial basins are usually the surface expression of the shallow alluvial groundwater table. Alluvial basin recharge generally occurs year-round due to springtime mountain runoff and storms during other seasons. This runoff percolates through the alluvial pediment gravel at the mountain fronts, recharging the shallow groundwater table. This recharge maintains the water table and is expressed as springs near the interior of the basins. These springs are used extensively by wildlife and by ranchers. Flow rates in the springs are variable. During the summer months and especially during periods of drought, the springs cease to flow. The water quality in the springs reflects the water quality in the shallow alluvial aquifer.

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Table 3.3-1
Water Availability in Shallow Alluvial Aquifers¹

Hydrographic Basin	Basin Number	Perennial Yield (acre-feet/year)	Committed Resources (acre-feet/year)	Designated Groundwater Basin ²
White Pine County				
Humboldt River Basin				
Huntington Valley	47	25,000	8,124	Yes
Central Region				
Newark Valley	154	18,000	12,035	No
Little Smokey Valley-north	155A	5,000	3,484	No
Railroad Valley-north	173B	75,000	40,820	No
Jakes Valley	174	12,000	54	No
Long Valley	175	6,000	3,307	No
Ruby Valley	176	53,000	33,822	Yes
Butte Valley-south	178B	14,000	318	No
Steptoe Valley	179	70,000	78,531 ³	Yes
Cave Valley	180	2,000	13	No
Lake Valley	183	12,000	28,981 ³	Yes
Spring Valley	184	100,000	24,778	No
Tippett Valley	185	3,500	472	No
Antelope Valley-south	186A	800	637	No
Antelope Valley-north	186B	1,700	613	No
Great Salt Lake Basin				
Deep Creek Valley	193	2,000	0	No
Pleasant Valley	194	1,500	976	No
Snake Valley	195	25,000	12,389	No
Hamlin Valley	196	5,000	368	No
Colorado River Basin				
White River Valley	207	37,000	25,007	No
Lincoln County				
Central Region				
Emigrant Valley-Groom Lake	158A	2,800	12	No
Emigrant Valley-Papoose	158B	10	0	No
Frenchman Flat	160	16,000	0	No
Three Lakes Valley-north	168	4,000	0	No
Tikapoo Valley-north	169A	1,300	7	No
Tikapoo Valley-south	169B	3,000	0	No
Penoyer Valley	170	4,000	19,768 ³	Yes
Coal Valley	171	6,000	25	No
Garden Valley	172	6,000	366	No
Railroad Valley-north	173B	75,000	40,820	No
Cave Valley	180	2,000	13	No
Dry Lake Valley	181	2,500	56	No
Delamar Valley	182	3,000	7	No
Lake Valley	183	12,000	28,981 ³	Yes
Spring Valley	184	100,000	24,778	No

Table 3.3-1 (Continued)

Hydrographic Basin	Basin Number	Perennial Yield (acre-feet/year)	Committed Resources (acre-feet/year)	Designated Groundwater Basin ²
Great Salt Lake Basin				
Hamlin Valley	196	5,000	368	No
Escalante Desert Basin				
Escalante Desert	197	1,000	2	No
Colorado River Basin				
Dry Valley	198	1,000	7,207 ³	No
Rose Valley	199	100	1,660 ²	No
Eagle Valley	200	300	297	No
Spring Valley	201	4,100	1,164	No
Patterson Valley	202	4,500	5,435 ³	No
Panaca Valley	203	900	28,134 ³	Yes
Clover Valley	204	1,000	3,690 ³	No
Lower Meadow Valley Wash	205	5,000	29,680 ³	Yes
Kane Springs Valley	206	0	0	No
White River Valley	207	37,000	25,007	No
Pahroc Valley	208	21,000	7	No
Pahranagat Valley	209	25,000	9,714	No
Coyote Springs Valley	210	18,000	0	Yes
Lower Moapa Valley	220	16,500	5,660	Yes
Tule Desert	221	1,000	4	No
Virgin River Valley	222	3,600	13,307 ³	Yes
Nye County				
Central Region				
Little Smokey Valley-north	155A	5,000	3,484	No
Little Smokey Valley-central	155B	100	2	No
Little Smokey Valley-south	155C	1,000	17	No
Hot Creek Valley	156	5,500	4,219	No
Coal Valley	171	6,000	25	No
Garden Valley	172	6,000	366	No
Railroad Valley-north	173B	75,000	40,820	No
Colorado River Basin				
White River Valley	207	37,000	25,007	No
Pahroc Valley	208	21,000	7	No

¹Source: Nevada Division of Water Resources 2003. The information is current as of August 2003, but may be revised by the Division as necessary in ongoing water resources administration.

²Designated groundwater basins are basins where permitted ground water rights approach or exceed the average annual recharge and the water resources are being depleted or require additional administration. State-declared preferred uses may include, among others, municipal and industrial, domestic, and/or agriculture. The Nevada State Engineer has additional authority to administer water resources in a designated groundwater basin.

³The shallow alluvial groundwater resource currently is fully allocated by the Nevada Division of Water Resources.

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Groundwater evapotranspiration losses have been studied in Nevada since the 1940s. More recent research using current data and techniques has been carried out to revise regional groundwater evapotranspiration and groundwater budgets in the Great Basin of eastern Nevada (Nichols 2000). As Nichols' estimates indicate, evapotranspiration by phreatophytic plant communities accounts for a significant consumption of groundwater recharge resources. In the Great Basin, plants considered phreatophytes (basically, those that normally reach and consume groundwater by root system adaptations) consist of riparian-area trees, shrubs, grasses, and grass-like plants; and some salt-desert shrubs and grasses.

In addition to groundwater consumption by phreatophytes, shrubs, and tree species common to the District develop extensive near-surface lateral root systems that capture rainfall and snowmelt. Although they may generate deep taproot systems, pinyon, juniper, and big sagebrush frequently have a high proportion of active roots at shallow soil depths (Evans 1988; Flanagan et al. 1991; Gedney et al. 1999). In addition to their winter transpiration demand, pinyon and juniper are particularly efficient at utilizing summer precipitation (Flanagan et al. 1991). This may result in the increased growth and competition of these species in areas where such seasonal rainfall forms an important part of the annual average.

Consumptive use of soil moisture and groundwater by plant transpiration is one of the major factors affecting water availability in the Ely District. Numerous studies have been made of evapotranspiration rates in arid and semi-arid settings. The research is useful for comparative purposes. Annual water use by pinyon-juniper woodlands ranges from about 14.5 to 27.5 inches (American Society of Civil Engineers 1989). Big sagebrush consumes on the order of 8 to 12 inches per year, and tamarisk water consumption generally ranges from 30 to 70 inches per year. Upland grass communities utilize about 6 to 12 inches per year (American Society of Civil Engineers 1989).

Canopy cover and interception losses also affect water availability on the District. Interception is the component of precipitation captured by the vegetation canopy or underlying debris. Rangeland interception losses are generally between 20 and 40 percent of precipitation, but may have a wider range in juniper (Wilcox et al. 2003; Gedney et al. 1999). Subsequent evaporation prevents much of this water from reaching the soil surface and therefore, it is not available for other plant species. Pinyon and juniper stands intercept large quantities of precipitation and thus reduce water available for groundwater recharge.

Surface Water

Surface water resources in the eastern Great Basin include perennial, intermittent, and ephemeral streams, marshlands and small lakes, intermittently inundated playas, and manmade impoundments. Springs, which are an expression of the groundwater/surface water interface, are discussed above under "Groundwater." The overall combination of limited precipitation, upstream agricultural diversions, soil and geologic conditions, and evapotranspiration demand in the District has resulted in limited streamflows in general, and few intermittent or perennial streams. Most streams in the District are ephemeral and flow from the mountains to the alluvial basins in response to spring snow melt or heavy rains. Most perennial streams that flow from the mountain fronts seep into unconsolidated deposits or are diverted for irrigation. **Map 3.3-1** shows the location of perennial streams and mapped springs within the overall boundary of the planning

area. Water data are available from the U.S. Geological Survey for perennial streams in the Ely District (U.S. Geological Survey water data web site: www.water.usgs.gov).

Approximately 6,800 square miles occur within the Colorado River drainage of the Ely District (Nevada Division of Water Resources 2003b). The primary streams in the Ely District that drain into the Colorado River system include Lower Meadow Valley Wash and the White River, both of which are tributaries to the Virgin River. Over the last several decades, salinity in the Colorado River has become a primary water quality concern.

National, state, and local programs based on the Clean Water Act and the Colorado River Basin Salinity Control Act have been developed to regulate water quality in the Colorado River Basin. In 1994, the BLM was directed (by amendment to the Colorado River Basin Salinity Control Act) to develop a comprehensive program for minimizing salt contributions from lands it administers (U.S. Bureau of Reclamation 2004). The agency objective is to reduce the salt load of the Colorado River by 89,000 tons per year by 2015 (National Applied Resource Sciences Center 1999). Land management activities within the Colorado River watershed must consider the agency's role and objectives as a member of the multi-agency Colorado River Basin Salinity Control Forum.

In addition, an objective within BLM is to reduce the density and distribution of tamarisk (salt cedar) along drainages (Medlyn 2004). As tamarisk displaces native vegetation, the original habitat values for many native wildlife species are reduced (Lovich 1996). In addition to being an aggressive weed, the biological characteristics of tamarisk can cause undesirable modifications in the surrounding environment. Common changes include increased soil salinity that inhibits native plant germination and growth, and increased water consumption (Wiesenborn 1996). In areas where vegetation has declined because of overgrazing, wildfires, or other land disturbing activities, soil erosion has caused an increase in the total suspended sediments in streams. Springs attract cattle and wildlife. Water quality immediately downgradient of ephemeral or intermittent streams or flowing springs may exhibit a decline due to physical site alteration and concentration of animal fecal material (Tippets et al. 2001; Rockwell 2002; Health Effects Review 1996).

The Nevada Division of Environmental Protection classifies water bodies based on the degree of impact from human activities, such as urban drainage, industrial activity, agricultural irrigation, and waste disposal. Class A waters are those least affected by human activity, while Class D waters are substantially affected. The classification of waters in White Pine, northeastern Nye, and Lincoln counties (Nevada Administrative Code 445A.124 to 445A.127) are presented in **Table 3.3-2**. This table shows that many reservoirs are Class B or Class C waters, while most streams in the Ely District are Class A waters.

3.3.2 Trends

Groundwater

Current trends in Nevada have been toward the development of groundwater for municipal, industrial, and agricultural uses. Nevada, especially eastern Nevada, has seen increasing demand for groundwater appropriations that involve interbasin transfer of water. These transfers are from primarily agricultural areas

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**Table 3.3-2
Classification of Waters in the Ely District¹**

Water Body	Hydrographic Region	Hydrographic Basin	Comments
Class A Waters (Relatively pristine waters not affected by industrial or agricultural activity.)			
Nye County			
Bailey Creek	10	140	
Currant Creek	10	173	
Pine Creek	10	140	
Stoneberger Creek	10	140	
White Pine County			
Huntington Creek	4	47	
Lehman Creek	11	195	
Silver Creek	11	195	
Berry Creek	10	179	
Bird Creek	10	179	
Cave Creek	10	179	
Cleve Creek	10	184	
Currant Creek	10	173	
Duck Creek	10	179	
East Creek	10	179	
Goshute Creek	10	179	
North Creek	10	179	
Pine Creek	10	184	
Ridge Creek	10	184	
Silver Creek	10	195	
Timber Creek	10	179	
Baker Creek	11	195	
Hendry's Creek	11	195	
White River	13	207	
Class B Waters (Waters with light-moderate human habitation, light industrial activity, light-moderate agricultural use, and moderate influence of human activity on the watershed.)			
Lincoln County			
Clover Creek	13	204	
Eagle Valley	13	200	
Eagle Valley Reservoir	13	201	
White Pine County			
Cave Lake	10	179	
Illipah Reservoir	10	174	
Silver Creek Reservoir	11	195	
White River	13	207	National Forest to Ellison Creek
Nye County			
Currant Creek	10	177	

Table 3.3-2 (Continued)

Water Body	Hydrographic Region	Hydrographic Basin	Comments
Class C Waters (Waters with moderate urban use, moderate industrial activity, intensive agricultural use, and a watershed altered by man.)			
Lincoln County			
Echo Canyon Reservoir	13	199	
Nesbitt Lake	13	209	
Pahrnagat Reservoir	13	209	
Schroeder Reservoir	13	222	
White Pine County			
Comins Reservoir	10	179	
Gleason Creek	10	179	from its origin to Highway 44
Snake Creek	11	195	
Willow Reservoir	10	179	
Class D Waters (Waters in industrial areas, agricultural waters, and waters subject to multiple discharge of wastes.)			
White Pine County			
Gleason Creek	10	179	Highway 44 to Murry Creek confluence
Murry Creek	10	179	Gleason Creek to south line of Section 35, T17N, R63E

¹Based on ongoing Nevada Division of Environmental Protection investigations regarding potential sources of potable waters of the state. Additional information regarding aquatic and stream resources for fisheries and wildlife is presented in Section 3.6.

Source: Nevada Administrative Code Chapter 445A.124-127.

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to large municipalities or areas of residential and recreational development adjacent to municipalities. Areas around Reno, Carson City, and especially Las Vegas have experienced an increasing demand for water that only can be met by greater conservation or further water resources development (including groundwater development) in agricultural areas, river systems, or undeveloped basins, and transfer of the water to the more populated regions. In the past decade or so, the Las Vegas metropolitan area has experienced record population growth and associated water demand increases. This trend is projected to continue, with an additional approximately one million residents predicted for Clark County by 2030 (Southern Nevada Water Authority 2004). The Southern Nevada Water Authority has identified several water supply options to address current and future water supply issues in the area (Southern Nevada Water Authority 2004). Surface water transfers from the Muddy River (Hydrographic Basin 219, **Table 3.3-1**) and the Virgin River Valley (Hydrographic Basin 222, **Table 3.3-1**) are alternatives that could be pursued. Groundwater diversion applications for between 125,000 and 200,000 acre-feet per year from White Pine, Nye, and Lincoln counties have been filed with the Nevada Division of Water Resources by the Southern Nevada Water Authority (Southern Nevada Water Authority 2004). Groundwater would be piped from the source regions into the Las Vegas metropolitan area.

Table 3.3-1 shows the groundwater demands and estimated perennial yield in the Ely District. In some basins, the estimated perennial yield is fully committed to existing uses. In White Pine County, these basins are Steptoe Valley, and Lake Valley. In Lincoln County, these basins are Indian Springs Valley, Penoyer Valley, Railroad Valley (south) Lake Valley, Dry Valley, Rose Valley, Patterson Valley, Panaca Valley, Clover Valley, Lower Meadow Wash Valley, and the Virgin River Valley. Many of these over-committed basins are designated basins, indicating that the Nevada Division of Water Resources will closely monitor future groundwater use and may not issue new groundwater permits.

Surface Water

All surface waters within the planning area have been appropriated.

3.3.3 Current Management

Water Rights

The State Engineer administers water rights. All surface water in Nevada is fully appropriated (Nevada Division of Water Resources 1999) and no new applications for permits to appropriate surface water rights may be approved. Federal reserved water rights are water rights reserved by applicable Executive Orders or legislation. The doctrine of federal reserved rights evolved to ensure that public lands would have sufficient water to meet the purposes for which they were reserved. The priority date for federal reserved rights is the signing date of the reservation. If BLM identifies a need for a new water development on public lands, the BLM will apply to the Nevada State Engineer for a permit to appropriate water for beneficial use recognized in NRS533. Public Water Reserves are federal reserved rights created by Presidential Executive Order to preclude monopolization of water sources on arid rangelands of the west. They reserve water from springs and water holes specifically for livestock watering or domestic use only. All other beneficial uses of such

springs or water holes require application for a state appropriative right. By agreement BLM notifies the State Engineer of all claimed Public Water Reserves.

Water Quality

The Nevada Division of Environmental Protection administers the Clean Water Act as amended (P.L.10 0-4) for waters of the State of Nevada. A Memorandum of Understanding for Water Quality Management Activities (dated September, 2004) was approved by Nevada Division of Environmental Protection and BLM which identified opportunities for cooperation to administer the Clean Water Act to the extent practical and as allowed by other applicable laws and available resources. These opportunities include: development of best management practices, coordinated water quality monitoring programs, review of policies and procedures, and cooperative efforts to establish water quality objectives and requirements. Further, BLM agrees to recognize the state's beneficial uses of water, water quality standards, and monitoring and nonpoint source program objectives. The state acknowledges the BLM's role and responsibility for the maintenance of water quality consistent with the Clean Water Act and state regulations.

3.4 Soil Resources

3.4.1 Existing Conditions

The soil types in the Ely District are strongly associated with landforms and physiographic location (Blackburn 1998). The types of soils that have developed have been strongly influenced by the type of bedrock geology. As discussed in Section 3.18, Geology and Mineral Extraction, the valley areas are typified by unconsolidated sedimentary deposits including alluvial and lakebed deposits. The areas adjacent to the mountain ranges (piedmonts) are composed of alluvial fans and related features. The mountain ranges are composed generally of sedimentary, metamorphic, and igneous rocks.

Soils can be found in the following four major settings in any of the valleys and adjacent mountain ranges.

Basin Floors. These soils occupy level to gentle slopes and can be very deep. Texture ranges from moderately coarse to fine-grained. They generally show little soil profile development, although in some cases, accumulations of soluble salts or silica occur at depth. Only a few of these soils are subject to high water tables, and they are seldom flooded.

Alluvial Fans and Stream Terraces. Soils in these areas occupy level to moderate slopes, and consist of fine to coarse textures. They generally exhibit little profile development. Some of the soils are associated with high water tables and occasionally can be flooded.

Fan Piedmonts. These soils formed where alluvial fans coalesce into a single linear feature that parallels a mountain front (Blackburn 1998). These soils have level to moderately steep slopes and can be shallow to very deep. Texture ranges from moderately coarse or gravelly to moderately fine. Silica and lime cementation may be present in some of these soils.

Hills and Mountains. These soils are found on mountain slopes, and the sides of hills and are very shallow to deep. They contain gravel and coarse-textured material and in many places are underlain by bedrock at shallow depths. These soils, while not subject to flooding, may be at risk for erosion, especially on steeper slopes.

Biological soil crusts (also referred to variously as cryptogamic, microbiotic, crypobiotic, and microphytic crusts) are found in the Great Basin and parts of the Mojave Desert. Living organisms and their byproducts form the biological crusts by binding soil particles together with organic materials. These biological crusts contribute to important ecological functions such as soil stabilization, water infiltration, and plant establishment. Although they tolerate harsh growing conditions, biological crusts are not well adapted to physical disturbances.

3.4.2 Trends

Soil erosion and related losses of productivity are ongoing concerns within the District. The primary concerns are related to sites where herbaceous vegetation is sparse to absent. Where understory

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vegetation is eliminated or degraded, soil erosion potential is greatly increased. Based on increasing density and abundance of woody species, such as pinyon and juniper, along the foothills of the local mountain ranges combined with field observations of erosion features, soil resources appear to be on a trend of increasing risk.

Available literature and an understanding of erosion processes indicate that surface water runoff is highly correlated to erosion and generally correlated to sediment yield (Blackburn 1975; Blackburn and Skau 1974; Pierson et al. 2003; Wilcox et al. 2003). Runoff and erosion rates vary primarily with specific storm duration and intensity, topography, infiltration and soil profile characteristics, vegetation canopy and ground cover, and surface roughness. Studies in a semi-arid watershed in south-central Oregon indicated that the highest sediment production rates were found in juniper woodlands (approximately 1,640 kilograms/hectare, or about 0.73 ton per acre) (Buckhouse and Mattison 1980). Big sagebrush communities typically had sediment yields of approximately 1,440 kilograms per hectare (0.64 ton per acre), with substantial increases where juniper was encroaching. Low sagebrush/grass and grassland communities had the lowest sediment yields, about 785 kilograms per hectare (0.35 ton per acre) (Buckhouse and Mattison 1980). Mean annual precipitation in that study area is approximately 340 millimeters (13.4 inches) (Eddleman and Miller 1991).

These findings are generally consistent with studies done elsewhere on western semi-arid and arid watersheds. In large-plot rainfall simulations, Pierson et al. (2003) found that uncut juniper-dominated plots began to run off after rainfall was applied equivalent to a 2-year return period thunderstorm. In contrast, plots studied 10 years after juniper was cut did not run off until the equivalent of a larger, 100-year return period storm was applied. The uncut plots also produced high quantities of interrill and rill erosion in comparison to much smaller levels measured on the plots where juniper had been removed 10 years earlier (Pierson et al. 2003).

Studies on or near the Ely District indicate larger variations in sediment production for several watersheds (Blackburn and Skau 1974). Canopy and herbaceous understory cover were not described, but substantial variation in infiltration and sediment yield was noted between the watersheds, and between the different community types on a given watershed. This is probably due to factors discussed below. Sediment yields from juniper and pinyon/juniper woodlands yielded 0.003 to 0.42 ton per acre of sediment, and sagebrush communities yielded 0.01 to 0.64 ton per acre. The highest infiltration rates and lowest sediment production were observed in the Steptoe watershed southeast of Ely, whereas the lowest infiltration rates and the highest sediment production were found in the Duckwater watershed southeast of Eureka. The smallest sediment yield in the Duckwater watershed came from singleleaf pinyon/Utah juniper communities, and the largest quantities of sediment came from big sagebrush, shadscale, and winterfat communities. In contrast, on the Steptoe watershed, the singleleaf pinyon/Utah juniper community consistently produced greater sediment than other sampled types (Blackburn and Skau 1974). The least sediment yield came from big sagebrush and crested wheatgrass (reseeded) types, although there was no significant difference or trend in sediment production compared to unseeded sagebrush/grass communities on the watershed.

On the Pine and Mathews Canyon watershed southeast of Caliente, the largest sediment yields were observed from the big sagebrush/rubber rabbitbrush community and from the singleleaf pinyon/Utah juniper/black sagebrush/serviceberry community (Blackburn and Skau 1974). The lowest sediment

production came from Utah juniper/crested wheatgrass, black sagebrush/intermediate wheatgrass and Utah juniper/big sagebrush/ squirreltail types. Vegetation communities that were railed and seeded or chained and seeded showed no statistically significant difference in sediment production from their unseeded counterparts, although there was a trend of increasing sediment production from the untreated sites (Blackburn and Skau 1974).

In further analysis, the amount of space between coppice dunes (areas of accumulated soil and litter under shrub or grass cover) was found to be associated with sediment production. Typically as dune interspaces increase and vesicular soil horizons form, sediment production increases (Blackburn and Skau 1974; Blackburn 1975). (Vesicular soil horizons are surface layers having strong platy or massive soil structure with numerous interconnected pores or air pockets; they are relatively unstable when saturated). Similar relationships with increasing sediment yields were found for percent bare ground and percent silt. As organic matter, percent sand, coppice dunes and litter increase, sediment production decreases. The large variation in sediment yields overall can be explained by the variation in plot slope and the location of coppice dunes and interspaces (Blackburn 1975). Similarly, on a watershed basis, erosion and sediment yields vary according to precipitation, soils, topography, and vegetation characteristics. Significantly, the unstable, massive or platy vesicular horizons form in arid and semi-arid areas of sparse vegetation, and tend to increase where herbaceous vegetation is removed between the protected accumulations of litter and soil under shrubs and grasses (Blackburn and Skau 1974). The instability of the massive or platy vesicular soil horizons accounts for larger sediment production from these areas.

In addition, accelerated soil erosion and sediment delivery to aquatic resources commonly are observed soon after catastrophic fires, especially on steep slopes. Regional trends toward increasing fuels and increased fire frequency and severity contribute further to the increasing risk of soil erosion on the District. Also, trampling by livestock, wild horses, or wildlife, and increasing recreational use and severe wildfires affect biological crusts. When the crusts are diminished, soil erosion potential increases.

3.4.3 Current Management

Erosion rates are predicted and evaluated using the Revised Universal Soil Loss Equation prior to substantial ground disturbing activities on the District. Best management practices typically are used to minimize soil erosion and sediment yield on

RMP Management Focus

The restoration and maintenance of healthy ecological systems within watersheds is a primary focus for the future management of the Ely District. Healthy ecological systems are geographically diverse and change over time. They are compatible with soil potential and are resilient to disturbance.

Resources and resource uses will be managed to restore or maintain ecological health. Certain resource management changes and active treatments may need to be implemented, in portions of watersheds, to accomplish this objective. Adaptive management will be pursued to avoid deteriorating conditions favoring invasive plants and catastrophic fires. Any projects will be implemented so as to result in a mosaic of vegetation within a watershed.

In the long term, natural disturbance (such as drought or fire) will occur and fewer treatments will be needed to maintain ecological health. The result will be a variety of vegetation phases within a watershed, which will provide diverse, healthy conditions for future generations.

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the site-specific local level. Soil inventories are conducted by the U.S. Department of Agriculture Natural Resource Conservation Service.

Implementation of watershed studies, as described in Section 3.19, Watershed Management, and associated treatment methods, as discussed in Section 3.5, Vegetation, also aid in controlling soil erosion and sedimentation.

3.5 Vegetation

3.5.1 Existing Conditions

The Ely District is located in a dry climate characterized by annual losses of water through evaporation and transpiration that exceed annual water gains in precipitation. Two divisions of dry climates commonly are recognized: the arid desert and the semiarid steppe (U.S. Department of Agriculture Natural Resources Conservation Service 2003). The greatest portion of the Ely District (northern two-thirds) lies within the semiarid, cold desert steppe better known as the Great Basin ecological system. The southern portion of the District lies within the arid, hot desert, Mojave Desert ecological system with a transitional vegetation zone between it and the Great Basin. The Great Basin and the Mojave Desert are distinguished by the presence of distinctive native shrub communities, dominated by sagebrush and creosote, respectively.

The District lies within all or portions of five Major Land Resource Areas as delineated by the U.S. Department of Agriculture Natural Resources Conservation Service and modified to reflect current knowledge from recent soils data (**Map 3.5-1**). The general characteristics of these Major Land Resource Areas are summarized in **Table 3.5-1**. Actual land cover types representing major vegetation types are displayed in **Map 3.5-2**. The vegetation types that occur on the District within the broad cover classes are listed in **Table 3.5-2** with their relative abundance.

The array of vegetation types on the District (except riparian/wetland and Mojave Desert communities) are broken down in **Table 3.5-3** with respect to their current conditions relative to the range of desired conditions discussed in Section 2.5.5. Existing conditions of the major vegetation types are further discussed in the remainder of this section. Appendix D discusses the state and transition models that help explain how these vegetation communities change over time and in response to various environmental factors.

Shrub Lands

Approximately 70 percent of the Ely District is characterized as sagebrush, salt desert shrub, or Mojave Desert (**Table 3.5-2**). Within the shrub land vegetation type there are many plant communities described, of which creosote, blackbrush, shadscale, salt desert scrub, winterfat, and sagebrush are most widespread on the District.

At the lower elevations in the hot desert climate regime of Major Land Resource Area 30, ephemeral vegetation grows in response to infrequent precipitation events and tolerates extended dry periods. Perennial vegetation associated with Major Land Resource Area 30 also is adapted to extended dry periods, and responds similarly to ephemeral vegetation by growing immediately after infrequent precipitation events. In this unit, shrub communities are variously dominated by blackbrush, creosote, and bursage.

Lower elevations of Major Land Resource Area 29 are characterized by extensive salt desert shrub communities dominated by greasewood and shadscale or shadscale and bud sagebrush. Salinization is a

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Table 3.5-1
General Characteristics of Major Land Resource Areas of the Ely District

Area Designation	Name	General Descriptor	Precipitation Pattern	Average Annual Precipitation (inches)	Major Landforms	Average Elevations (feet above mean sea level)	Major Vegetation
25	Owyhee High Plateau	Northern Great Basin	Precipitation is evenly distributed throughout the year.	8 to 15; up to 30 in the mountains.	Rolling plateaus and gently sloping basins. Steep north-south mountains.	4,590 to 7,540; up to 12,000 in the mountains.	Shrub-grassland characterized by big sagebrush or low sagebrush. Plateaus or benches have pinyon-juniper woodland and mountain mahogany. Higher elevations support montane forest types.
28A	Great Salt Lake area	Central Great Basin with a monsoonal influence	Precipitation occurs predominantly during winter and spring. Sporadic moisture in association with summer monsoonal influence also occurs.	5 to 8; up to 20 in the mountains.	Rolling plateaus and gently sloping basins. Steep north-south mountains.	4,000 to 6,500; up to 13,000 in the mountains.	Shadscale, greasewood, sagebrush, saltbush, pinyon-juniper woodland and upper montane forests.
28B	Central Nevada Basin and Range	Central Great Basin	Driest period occurs between mid-summer and mid-autumn.	5 to 25	Rolling plateaus and gently sloping basins. Steep north-south mountains.	4,500 to 6,500; up to 12,000 in the mountains.	Shadscale, greasewood, sagebrush, saltbush, pinyon-juniper woodland and upper montane

Table 3.5-1 (Continued)

Area Designation	Name	General Descriptor	Precipitation Pattern	Average Annual Precipitation (inches)	Major Landforms	Average Elevations (feet above mean sea level)	Major Vegetation
29	Southern Nevada Basin and Range	Transitional	Substantial precipitation occurs in summer.	3 to 20	Rolling plateaus and gently sloping basins. Steep north-south mountains. Extensive Pleistocene lake sediments and alluvium in the valley bottoms.	3,000 to 6,000; up to 11,000 in the mountains	Shadscale, greasewood, sagebrush, saltbush, pinyon-juniper woodland, and upper montane forests.
30	Sonoran Basin and Range	Mojave Desert	Precipitation primarily occurs during winter and early spring.	3 to 20	Broad basins, valleys, and old lakebeds predominate.	500 to 6,000; most valleys between 2,000 and 4,000.	Creosote, bursage, shadscale, and Joshua tree.

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dominant phenomenon resulting from high evaporation. Salty crusts accumulate on the soil surface. Salt-loving plants, or halophytes, such as saltbush and shadscale dominate large portions of the area because other plants have few or no physiological capabilities to tolerate the high salt conditions. Winterfat occurs both in pure monospecific stands and as a primary component of mixed shrub communities, commonly with shadscale. Distribution of salt desert shrub vegetation within the District is shown on **Map 3.5-3**.

Table 3.5-2
Vegetation Types Found on the Public Lands in the Ely District

Vegetation Type	Approximate Area (acres)	Proportion of District (percent)
Pinyon-juniper	3,593,400	31.5
Aspen	7,000	0.1
High elevation conifers	56,000	0.5
Salt desert shrub	1,221,000	10.7
Sagebrush ¹	5,619,500	49.3
Mountain mahogany	46,000	0.4
Mojave Desert vegetation	850,000	7.5
Riparian/wetland	3,100	0.0
Total	11,396,000	100.0
Nonnative seedings ²	269,500	2.4

¹Sagebrush category includes broad array of sagebrush species and communities as well as grassland inclusions.

²Seedings duplicate areas listed in other categories.

Source: BLM unpublished data.

Within Major Land Resource Areas 29, 28a, and 28b, the mid-elevations are dominated by various species, forms, and densities of sagebrush. Nearly all species and varieties of sagebrush are endemic to the western U.S. where this group of species is the most widely distributed of all shrubs (**Map 3.5-4**). The most widespread of these on the Ely District are black, Wyoming big, mountain big, and big sagebrush, although others occur. The local sagebrush species and varieties are separated along ecological gradients related to soil and climate conditions (Young and Evans 1986). For example, the occurrence of deep soils coincides with the distribution of big sagebrush in the Great Basin (Hironaka 1986). The 12-inch mean annual precipitation line generally divides the ranges of Wyoming big and mountain big sagebrush.

Mountain mahogany sites occur on slopes at the mid to higher elevations. Mountain mahogany is long-lived, and many stands are mature with individual plants reaching tree size in height and diameter. Mature mahogany tends to be shade intolerant and loses its competitive advantage when overtopped by conifers (Schulz et al. 1990). Distribution of mountain mahogany sites within the District is illustrated on **Map 3.5-5**. Most mountain mahogany sites occur within the same elevation range as mountain big sagebrush.

Native perennial bunchgrasses, such as bluebunch wheatgrass, bottlebrush squirreltail, Indian ricegrass, and Great Basin wildrye, historically were associated with the interspaces between sagebrush plants. In

many areas today, the perennial bunchgrasses have been largely replaced by a variety of invasive annual species such as halogeton and cheatgrass, as the result of fires, lack of fires, inappropriate grazing practices, or various soil disturbances (**Map 3.5-6**). For further discussion of cheatgrass on the District, refer to Section 3.21, Noxious and Invasive Weed Management. Crested wheatgrass, an introduced species, has been seeded in some areas, and has become well established in some areas. In addition to its value for livestock, wild horses, and wildlife, it has proven to have both fire resistance and soil-binding abilities. Where crested wheatgrass occurs, it can preclude dominance by cheatgrass.

Table 3.5-3
Current Conditions of Major Vegetation Types

Pinyon-Juniper		
	Herbaceous State	9%
	Herbaceous State (Immature Woodland Phase)	1%
	Tree State (Mature Woodland Phase)	9%
	Tree State (Overmature Woodland Phase)	81%
	Tree State (Annual Invasives Phase)	0%
Aspen		
	Herbaceous State (Herbaceous, and Herbaceous-Shrub and Sapling Phase)	0%
	Herbaceous State (Immature Phase)	0%
	Tree State (Mature Woodland Phase)	40%
	Tree State (Overmature Woodland Phase)	60%
High-elevation Conifer		
	Herbaceous State (Herbaceous, and Herbaceous/Sapling Phase)	0%
	Herbaceous State (Immature Woodland Phase)	0%
	Tree State (Mature Phase)	43%
	Tree State (Overmature Phase)	57%
Salt Desert Shrub		
	Herbaceous State	18%
	Shrub State	64%
	Altered: Annual Invasive/Exotic	18%
	Altered: Perennial Nonnative Seeded	0%
Sagebrush		
	Herbaceous State	17%
	Shrub State	54%
	Tree State (Expansion of pinyon and juniper into shrublands)	17%
	Annual	9%
	Seeded	2%
Mountain Mahogany		
	Herbaceous State (Herbaceous Phase)	0%
	Herbaceous State (Shrub Phase)	0%
	Shrub State (Shrub - Herbaceous Phase)	5%
	Shrub State (Shrub Phase)	42%
	Shrub - Tree Like State (No Understory Phase)	53%
Nonnative Seeding		
	Herbaceous State	4%
	Shrub State	80%
	Tree State (Expansion of pinyon and juniper into nonnative seedings)	15%
	Altered: Annual Invasive	1%

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Forests and Woodlands

Approximately 31 percent of the Ely District is pinyon-juniper woodlands, dominated by single leaf pinyon pine and/or Utah juniper (**Table 3.5-2**) (**Map 3.5-7**). Pinyon-juniper woodland is predominant at the lower elevations of the mountain slopes. Less than 1 percent of the area is occupied by ponderosa pine, white fir, spruce, aspen, and bristlecone pine distributed primarily on steep mountain slopes and ridges.

Approximately 86 percent of the pinyon-juniper woodland type contains high tree densities and high canopy closure with little or no understory. Annuals, mainly cheatgrass, dominate the understory of an estimated 9 percent of the woodland type.

Aspen plant communities on the District generally occur as small stands in isolated pockets, mainly on northern and eastern slopes at higher elevations on the mountains and within drainages (**Map 3.5-8**). Approximately 7,000 acres of this type are identified on the Ely District. Of those identified, approximately 60 percent are characterized as being over-crowded with coniferous trees. Many of these stands have little or no aspen regeneration.

Kay (2001) found in his study of aspen communities in central Nevada that excessive herbivory, primarily by domestic livestock, is a key factor limiting regeneration of these stands. Because environmental conditions are rarely favorable for growth and establishment of aspen seedlings, the species spreads and regenerates primarily through vegetation propagation, i.e., root sprouting. The young shoots, both leaves and stems, are highly palatable to various grazing animals including livestock and elk.

High elevation conifer forests cover an estimated 56,000 acres of the District (**Map 3.5-9**). Approximately half (57 percent) are characterized as being in the overmature phase of the tree state with canopy cover exceeding 40 percent.

Riparian/Wetland Vegetation

As discussed in Section 3.3, Water Resources, there is a limited amount of surface water on the Ely District that manifests in perennial and ephemeral streams, small lakes, and groundwater springs. Riparian areas are transition areas between permanently saturated wetlands and the surrounding upland areas. These areas are characterized by vegetation or physical characteristics that reflect the relatively higher availability of moisture. Definitions contained in BLM Technical Reference 1737 exclude ephemeral streams and washes where riparian vegetation is absent as riparian areas in need of special management (BLM 1998a).

Riparian wetland sites on the District are lentic, which refers to standing water as in lakes, springs, and bogs, or lotic, where water is flowing as in rivers and streams. There are approximately 188 miles and 3,100 acres of riparian/wetland vegetation on the Ely District associated with lotic and lentic environments, respectively (BLM 2001d, BLM unpublished data). Riparian/wetland vegetation communities are diverse in composition and structure, ranging from herbaceous wetlands to drainages dominated by woody plants. Sedges, rushes, and cattails characterize herbaceous wetlands on the District. Virtually all of the riparian areas on the District are classified as emergent herbaceous wetlands. Important woody riparian plants on

the District include narrow-leaf cottonwood, willows, aspen, chokecherry, water birch, and dogwood, depending primarily on elevation and stream gradient.

One of the most substantial riparian habitats on the District is Meadow Valley Wash, located predominantly in Major Land Resource Area 30. Meadow Valley Wash is one of only two perennial streams within Major Land Resource Area 30. Altered hydrologic conditions in Meadow Valley Wash are subject to frequent flash floods. This riparian area has been noted to have unstable soils and high levels of runoff, which have led to landslides and associated increases in sediment loading to the stream.

3.5.2 Trends

Very limited quantitative data exist regarding trends of vegetation communities within the Ely District. However, the general consensus among BLM managers and scientific advisors to the agency is that the general patterns of movement toward thresholds for key vegetation communities, especially sagebrush, observed in other portions of the Great Basin are equally valid within the District. Thus, while the rates of decline are not defined under current knowledge, it appears that historic deterioration in these communities continues to varying degrees under current management.

Shrub Lands

Substantial alterations of shrub communities in various portions of the Great Basin have been identified and attributed to historical poor grazing management, the introduction and rapid expansion of annual bromes on degraded rangelands, and the resulting changes in fire regime (Pellant 1990; Whisenart 1990; Sparks et al. 1990; Billings 1994). Within the Ely District these alterations are less advanced, but definitely present as pending threats. In creosote and sagebrush dominated communities, shrub recovery after fire is slow, because most of the shrub species are easily killed by fire and have no adaptations to fire, such as resprouting. Pre-settlement fire return intervals in the sagebrush zones of the Great Basin varied from 25 to 200 years (see Section 3.20). According to Perryman et al. (2003), sagebrush communities at higher elevations and moisture levels have experienced decreasing fire frequencies (lengthened fire return intervals) that have been accompanied by increasing abundance of pinyon and juniper trees in these communities and reduced abundance of perennial herbaceous understory species. In lower elevation, drier sagebrush communities and salt desert shrub communities, the reduction in perennial herbaceous understory species, due largely to overly intense, prolonged, or poorly timed grazing and increased competition from shrubs in the absence of a normal fire regime, has been accompanied by substantial increases in the abundance of invasive annual grasses. Competition for available soil resources from nonpalatable species is the predominant factor deteriorating plant productivity, plant survival, and site resilience in many areas. Overly intense, prolonged, or poorly timed grazing by livestock, wild horses, or wildlife makes this problem worse by favoring root growth of nonpalatable species such as sagebrush or pinyon juniper trees. This transition provides sporadic periods of abundant fine fuels for increased fire frequencies.

Frequent fire in the salt desert shrub and sagebrush types in portions of the Great Basin over the last 25 years is a recent trend, largely attributable to the establishment of cheatgrass (West 1994). The

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reduction in shrub cover following major fires has facilitated a rapid and extensive conversion to a cheatgrass system with short fire return intervals (Meyer et al. 2001). (Also see Section 3.21, Noxious and Invasive Weed Management). Altered fire regimes have further affected species composition, shrub densities, fuel loads, and processes such as nutrient cycling (Perryman et al. 2003).

At some mid and low elevations, decades of fire suppression and overly intense, prolonged, or poorly timed grazing have led to shrub dominant sagebrush systems that cover large portions of the landscape. These areas are characterized by sagebrush plants with few perennial herbaceous grasses and forbs in the understory. Monocultures of even-aged sagebrush are common on the District.

Rowland et al. (2003) estimated that approximately 43 percent of the sagebrush communities in the Ely District are at moderate and 24 percent at high risk of displacement of sagebrush by cheatgrass. They similarly estimated 21 percent moderate risk and 36 percent high risk for displacement of other susceptible native species by cheatgrass. They rate approximately 3 percent of the sagebrush communities at moderate risk and 32 percent at high risk for replacement of sagebrush cover types by pinyon-juniper woodlands. Connelly et al. (2004) indicate that the displacement of sagebrush by the expansion of pinyon-juniper woodlands has severely reduced the area of the sagebrush ecological system and degraded its habitat quality.

Pinyon and juniper trees have been expanding into grass and shrub lands throughout the west for decades as described below under Forest and Woodlands. Tree presence appears to be highest in black sagebrush communities.

The recent trends within sagebrush communities are increasing abundance of young pinyon and juniper trees. Junipers tend to be more widespread than the pinyons and first to establish in lower elevations. Principal factors contributing to changes in tree density and distribution have been identified by various researchers as historic improper grazing, fire suppression, global warming, and increased carbon dioxide, all of which seem to favor woody species proliferation.

Blackburn and Tueller (1970) concluded that the invasion of pinyon and juniper into black sagebrush communities at several sites in the Ely District was very limited until the late 1800s and early 1900s when rapid expansion of the woodland species occurred at numerous locations. At these sites, the most rapid invasion by both pinyon and juniper occurred after 1920. They attributed the accelerated invasion by both species to a combination of overgrazing, fire suppression, and climatic changes (particularly when a series of drought years is followed by several moist years). Tausch et al. (1981) conducted a study of pinyon-juniper woodlands in 18 randomly selected mountain ranges in the Great Basin and found that approximately 40 percent of the sampled plots had trees establishing during the past 150 years. They note that this period generally coincides with introduction of heavy livestock grazing, harvest of trees for mining and smelting activity, and increased fire suppression following settlement of the region.

Most researchers agree that fire was historically the controlling factor preventing pinyon and juniper trees from expanding into shrub communities, and the lack of fire has allowed pinyon and juniper seedlings to increase in shrub communities adjacent to their historic landscape position on ridgetops and high rocky

ground (Burkhardt and Tisdale 1969, 1976; Miller and Tausch 2001). Historic livestock grazing that decreased herbaceous plant densities has further facilitated the current rates of woody plant expansion into shrublands.

Forests and Woodlands

Along with expansion of pinyon and juniper into shrublands, Vernon et al. (2002) also document the trend of increasing numbers of young trees and increasing tree density in the pinyon-juniper woodlands. Increased tree density and distribution has led to two distinct trends within the pinyon-juniper woodland zone. Increased tree densities contribute to fuel loading, and when ignitions do occur, they may sustain extremely hot fires under suitable conditions. Secondly, increased tree densities have caused a widespread reduction of herbaceous understory components through competition for sunlight and nutrients, which has led to accelerated rates of soil loss (Naillon et al. 1999; Perryman et al. 2003; Tausch and West 1995; West 1999).

As a community type, aspen has been declining in the Intermountain West since shortly after European settlement (Kay 2001). Kay's (2001) studies of aspen communities in central Nevada concluded that generally poor conditions prevail, and that many stands have not reproduced in over 100 years. As discussed in Section 3.5.1, this absence of regeneration appears to be primarily the result of herbivory by livestock.

Native and nonnative insect and disease populations currently known to be affecting local forest and woodland areas include the pinyon Ips beetle, dwarf mistletoe, and white pine blister rust. A recent, dramatic increase in pinyon mortality in various localities throughout the west has been attributed to pinyon Ips responding to prolonged drought that weakened trees and a series of mild winters that have enabled rapid increases in beetle populations. A Nevada BLM news release of July 2, 2004, indicates that "Insect damage to pinyon and juniper woodlands is severe in...White Pine County..." Climate change is, and will continue to be, a major factor determining insect and disease conditions.

White pine blister rust is an introduced disease, which is infecting and causing widespread mortality in all five-needle pines. It recently has been found in the Jarbidge and Ruby Mountains and is expected to infect neighboring mountains in the foreseeable future (U.S. Forest Service 2003; Vogler and Charlet 2004). There is concern that white pine blister rust could have substantial adverse effects upon bristlecone pine populations, if it becomes established in close proximity.

Riparian/Wetland Areas

Declines in native woody riparian species have been documented throughout the West and Great Basin. The extent to which woody riparian vegetation has been reduced from its former distribution on the Ely District is not known.

The exotic tree tamarisk has become established in waterways throughout the Intermountain West including available habitat on the Ely District, where it has replaced native woody riparian species such as cottonwood

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and willows. Inventories to date have located tamarisk infestations on approximately 12,500 acres and along 123 miles of watercourses.

A total of 108 sites (primarily springs) have been assessed for proper functioning condition, representing approximately 393 acres of lentic communities. Of these, 294 acres or 75 percent were classified as being in proper functioning condition; 85 acres or 22 percent were classified as functioning at risk (Table 3.5-4). The remainder were determined to be non-functional. Throughout the entire District, it is estimated that approximately 713 acres of riparian communities are non-functional or functioning at risk.

Table 3.5-4
Riparian Conditions of Select Sites on the Ely District Based on
Field Assessment of Proper Functioning Condition in Lentic Environments

Trend	Function Class					
	Proper Functioning Condition		Functioning At Risk		Non-functioning	
	Number of Sites	Acres	Number of Sites	Acres	Number of Sites	Acres
Upward	8	7	3	15	0	0
Downward	0	0	9	26	0	0
Unknown	62	287	13	44	13	14
Totals	70	294	25	85	13	14

Source: Unpublished BLM data.

3.5.3 Current Management

Vegetation resources are managed by and for different disciplines to meet objectives for such purposes as forage production, wildlife habitat, watershed function, noxious weed control, and fire management. Forage resources are discussed in Section 3.6, Fish and Wildlife, and Section 3.16, Livestock Grazing. Vegetation products are discussed in Section 3.17, Woodland and Native Plant Products. Noxious weeds are discussed in Section 3.21, Noxious and Invasive Weed Management.

Nonnative seedings are represented on approximately 270,000 acres of the District. These are largely characterized by crested wheatgrass, which was planted extensively in the Great Basin over several decades.

Vegetation treatments conducted on the District between 1990 and 2003 are tabulated in Table 3.5-5 according to type of activity. Over a 13-year period, an average of approximately 9,500 acres per year actively were managed primarily through burning, seeding, and chaining. Seeding with aerial- and ground-based equipment accounts for 80 percent of the acres treated during this period. The highest number of acres is attributable to seeding activities accomplished in 2000 and 2001 after wildfires (see Section 3.20, Figure 3.20-1). Fire rehabilitation during 1990 and 1997 also coincide with wildfire activity.

Table 3.5-5
Acres of Vegetation Treated per Year on the Ely District
1990 through 2004¹

Year	Treatment Type (acres)				Total Acres Treated	Wildland Fires
	Seeding ¹	Mechanical Including Chaining ²	Prescribed Fire ¹	Fire Rehabilitation ³		
1990	0	600	0	7,180	7,780	2,022
1991	600	0	0	0	600	205
1992	15	0	580	0	595	2,603
1993	400	0	0	0	400	37,669
1994	200	855	100	21,683	22,838	58,917
1995	0	1,650	0	0	1,650	1,122
1996	0	580	2,700	11,785	15,065	51,504
1997	430	1,034	1,000	8,247	10,711	10,255
1998	0	634	2,600	16,942	20,176	14,439
1999	0	0	4,103	6,559	10,662	42,701
2000	0	0	447	21,698	22,145	31,831
2001	0	1,137	2,927	12,209	16,273	16,236
2002	309	1,152	614	16,159	18,234	17,844
2003	0	2,470	530	382	3,382	792
2004	950	1,320	2,260	9,925	14,455	10,549
Total Acres	2,904	11,432	17,861	132,769	164,966	298,689

¹Excluding chemical weed treatments.

²Source: Range improvement projects database.

³Source: Unpublished BLM data.

Chaining and other methods such as fire, herbicide, and traditional tree cutting are used to reduce canopy cover of woody species, primarily pinyon and juniper trees. Although not accounted for in **Table 3.5-5**, tamarisk removal has been occurring in riparian habitats on the District consistent with the listing of tamarisk as a noxious weed by the State of Nevada.

Although riparian areas are a small portion of the eastern Nevada landscape, they are disproportionately valuable for watershed function, wildlife habitat, and recreation. In 1989, the BLM issued a Riparian Policy and Procedures Handbook, which increased the level of special management direction for riparian areas.

The BLM's Riparian Wetlands Initiative for the 1990s directed field units to restore or maintain riparian-wetland areas so that 75 percent or more would achieve proper functioning condition by 1997.

In order to integrate disturbance ecology, management activities, and vegetation growth and development across large and variable landscapes for site evaluation and management purposes, state and transition models were conceived in the 1980s. The models provide a means for organizing complex sets of ideas about the different interrelated processes directing ecological system change and the role management can

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take in affecting those processes. Use of the model can improve analysis, monitoring, and management in semi-arid rangelands (see Appendix D).

Based on the state and transition models, the Science Committee of the Eastern Nevada Landscape Coalition has developed management recommendations based on general draft state and transition models for vegetation communities on the Ely District. To date, management recommendations, threshold indicators, and desired conditions are available for black, Wyoming big, and mountain big sagebrush; winterfat; and shadscale communities. Additional recommendations for aspen and mountain shrub types are in progress.

The Ely Field Office currently manages the three designated natural areas and two research natural areas described in **Table 3.22-1**. These areas bring attention to, and protect selected components of the special and unique native flora within the District. These five special designations total approximately 12,600 acres and feature bristlecone pine, pygmy sage, swamp cedar, and riparian gallery forests.

RMP Management Focus

The restoration and maintenance of healthy ecological systems within watersheds is a primary focus for the future management of the Ely District. Healthy ecological systems are geographically diverse and change over time. They are compatible with soil potential and are resilient to disturbance.

Resources and resource uses will be managed to restore or maintain ecological health. Certain resource management changes and active treatments may need to be implemented, in portions of watersheds, to accomplish this objective. Adaptive management will be pursued to avoid deteriorating conditions favoring invasive plants and catastrophic fires. Any projects will be implemented so as to result in a mosaic of vegetation within a watershed.

In the long term, natural disturbance (such as drought or fire) will occur and fewer treatments will be needed to maintain ecological health. The result will be a variety of vegetation phases within a watershed, which will provide diverse, healthy conditions for future generations.

3.6 Fish and Wildlife

3.6.1 Aquatic Habitat and Fisheries

Existing Conditions

Aquatic habitat in the planning area includes a mixture of perennial, intermittent, and ephemeral streams, springs, lakes, and reservoirs that support fish (game and native nongame species) and invertebrate species for at least a portion of the year. In total, the planning area contains over 50 perennial stream segments on BLM-administered land (**Table 3.6-1**). Most of the perennial stream segments with game fish species are located in White Pine County. The majority of the lakes and reservoirs in the planning area are located on private or state-administered lands, which are not included in **Table 3.6-1**. BLM-administered land adjoins the boundary of a limited number of the reservoirs in White Pine County (i.e., Cold Creek Reservoir, Bassett Lake, and Comins Lake). Illipah Reservoir is included in this list because the BLM has developed and maintained recreational facilities (campsites and picnic areas) adjacent to the reservoir. No reservoirs or lakes in Lincoln or Nye counties are touched by BLM-administered land. Springs and their associated stream segments provide persistent habitat for fish and aquatic invertebrates. Based on inventories within the planning area, over 2,600 undeveloped springs have been mapped (see **Map 3.3-1**). Spring habitats provide important requirements for aquatic species such as water, food, and cover consisting of bottom substrate and vegetation.

Habitat quality in planning area water bodies depends on numerous factors such as annual precipitation, flow regimes or water volumes, extent of riparian vegetation, diversity of habitat features (i.e., pools, runs, and riffles), bank stability, types of fish cover, food sources, and water quality. Habitat quality varies by stream reach, with forested, higher-elevation stream segments generally containing better conditions compared to low-gradient, non-forested areas. Most of the water bodies located within the Ely District are considered low quality aquatic habitat due to the lack of persistent year-round stream flow, relatively high water temperatures, and limited riparian vegetation.

Both cold water and warm water fish species occur in watersheds within the District. Cold water fish are represented by trout species such as rainbow, brown, brook, Bonneville cutthroat, and rainbow-cutthroat hybrid. Warm water game fish species include largemouth bass and northern pike. Except for Bonneville cutthroat trout (native species), these species were introduced in Nevada. One of the game species, Bonneville cutthroat trout, also is a BLM-sensitive species and is discussed in Section 3.7, Special Status Species. The occurrence of game fish species in streams, reservoirs, and lakes within the planning area is provided in **Table 3.6-1**. The basis for the list is that at least a portion of the stream segment is located on BLM-administered land. Numerous other streams in the Humboldt National Forest streams also support trout populations. Trout may move downstream during high flow periods and may be present on BLM-administered land. However, these streams were not included in the list since these stream segments typically do not provide year-round habitat for aquatic species.

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Table 3.6-1
Game Fish Resources in the BLM Ely Planning Area

County/Water Body	Location (Township, Range)	Species
Lincoln		
Beaver Dam Wash	T3S, R71E	Rainbow trout
Clover Creek	T4S, R67E	Rainbow trout
Meadow Valley Wash	T2S, R69E	Rainbow trout, brown trout
Nye		
Cherry Creek	T3N, R57E	Rainbow trout, brown trout
North Fork Cottonwood Creek	T2N, R56E	Brook trout
Forest Home Creek	T6N, R59E	Brown trout
Pine Creek	T3N, R56E	Brook trout
White Pine		
Baker Creek	T13N, R68E	Rainbow trout, rainbow-cutthroat hybrid, brook trout
Bassett Creek	T18N, R66E	Rainbow trout
Bassett Lake	T13N, R68E	Rainbow trout, brown trout, northern pike, largemouth bass
Bastian Creek	T15N, R66E	Rainbow trout, brown trout
Big Springs Creek	T12N, R70E	Rainbow trout
Big Wash Creek	T12N, R70E	Bonneville cutthroat trout
Bird Creek	T18N, R65E	Rainbow trout, brook trout
Cherry Creek	T24N, R63E	Rainbow trout
Chin Creek	T25N, R67E	Rainbow trout
Cleve Creek	T16N, R66E	Rainbow trout, brown trout
Cold Creek	T23N, R55E	Rainbow trout
Cold Creek Reservoir	T23N, R55E	Rainbow trout
Comins Lake	T15N, R64E	Rainbow trout, brown trout, brook trout
Duck Creek	T17N, R65E	Rainbow trout, brown trout, brook trout
Duck Creek	T19N, R63E	Northern pike, largemouth bass
East Creek	T19N, R65E	Rainbow trout
Egan Creek	T22N, R62E	Rainbow trout
Eightmile Creek	T18N, R68E	Rainbow trout
Ellison Creek	T14N, R59E	Rainbow trout
Geyser Creek	T9N, R65E	Rainbow trout, brook trout
Goshute Creek	T25N, R63E	Bonneville cutthroat trout
Hampton Creek	T16N, R70E	Rainbow trout, Bonneville cutthroat trout
Hendry's Creek	T16N, R70E	Bonneville cutthroat trout
Huntington Creek	T25N, R55E	Rainbow trout, brown trout
Illipah Creek	T17N, R59E	Rainbow trout, brown trout
Illipah Reservoir	T17N, R59E	Rainbow trout, brown trout
Indian Creek, Big	T21N, R65E	Rainbow trout, brook trout
Kalamazoo Creek	T20N, R66E	Rainbow trout, brown trout, brook trout
Mattier Creek	T21N, R64E	Rainbow trout, brook trout
McCoy Creek	T18N, R66E	Rainbow trout, brown trout
Meadow Creek	T19N, R66E	Brown trout
Muncy Creek	T20N, R66E	Rainbow trout, brown trout, cutthroat trout
North Creek	T10N, R65E	Rainbow trout, brook trout
Odgers Creek	T18N, R66E	Rainbow trout

Table 3.6-1 (Continued)

County/Water Body	Location (Township, Range)	Species
Paris Creek	T25N, R62E	Brook trout
Piermont Creek	T19N, R66E	Brown trout
Pine Creek	T13N, R68E	Bonneville cutthroat trout
Pinto Creek	T19N, R54E	Rainbow trout
Seigel Creek	T22N, R66E	Rainbow trout
Shingle Creek	T13N, R68E	Brown trout, rainbow-cutthroat hybrid
Silver Creek	T14N, R70E	Rainbow trout, brown trout, brook trout
Snake Creek	T12N, R70E	Rainbow trout, brown trout, brook trout
Steptoe Creek	T16N, R65E	Rainbow trout, brown trout, brook trout
Strawberry Creek	T14N, R69E	Bonneville cutthroat trout
Sunkist (North) Creek	T21N, R65E	Brook trout
Taft Creek	T17N, R66E	Rainbow trout, brook trout
Tailings Creek	T18N, R63E	Rainbow trout, brown trout, brook trout
Timber Creek	T18N, R65E	Rainbow trout, brook trout
Unnamed	T16N, R68E	Rainbow trout, brown trout, brook trout
Vipont (Stephens) Creek	T16N, R66E	Rainbow trout
Water Canyon Creek	T19N & T20N, R55E	Rainbow trout, brook trout
White River	T13N, R61E	Rainbow trout, brown trout, brook trout
Willard Creek	T13N, R68E	Rainbow trout, rainbow-cutthroat hybrid
Willow Creek	T14N, R63E	Rainbow trout, brown trout

Source: Crookshanks 2004, 2003; Hutchings 2004, 2003; and Nevada Department of Wildlife 2003a.

Water bodies in the District also support native nongame fish species, which mainly comprise the sucker, minnow, and killifish families. Habitat used by native nongame fish species includes perennial streams, springs, spring outflows, reservoirs, and lakes. In general, the sucker species prefer stream habitats, while the killifish species usually are found in springs and slow-moving stream segments. The native minnow species utilize both flowing and standing water environments. Some of the native fish are discussed in Section 3.7, Special Status Species. Several nonnative nongame species such as *Gambusia*, convict cichlid, and shortfin molly affect native fish populations due to predation. Crayfish and bullfrogs also prey on native fish species.

Game fish species in the planning area utilize a variety of habitat conditions. Trout have adapted to a wide range of habitat conditions including lakes, reservoirs, and small to large-size streams (Sigler and Sigler 1987). Cover in the form of undercut banks, instream structure, and overhanging vegetation are important aspects of quality habitat for trout species. Natural reproduction for trout species occurs within numerous stream segments such as Goshute Creek (Bonneville cutthroat trout) and Clover Creek (rainbow trout). Spawning occurs in the spring for these species. Brown trout and brook trout are fall spawners. Largemouth bass and northern pike occur in reservoirs, lakes, and slow-moving streams such as Duck Creek. Both species usually are associated with instream structure and aquatic vegetation (Sigler and Sigler 1987). Largemouth bass is a spring and summer spawner, while northern pike breed in the spring. Habitat preferences and spawning periods for game fish species are provided in Table 3.6-2.

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Table 3.6-2
Game Fish Habitat Preferences and Spawning

Species	Habitat	Spawning	References
Rainbow trout	Optimum riverine habitat is characterized by clear, cold water with silt-free rocky substrate in riffle-run areas, abundant instream cover, and well-vegetated banks. Lake/reservoir habitat is characterized by clear water, cool temperatures, and available deeper water.	Spring, almost exclusively in streams.	Raleigh et al. 1984
Brown trout	Riverine habitat consists of clear, cool to cold water; a relatively silt-free rocky substrate in riffle-run areas; mixture of pools, riffles and runs; well vegetated streambanks and abundant instream cover. Most cover-oriented of all trout species. Lake/reservoir habitat is the same as described for rainbow trout.	Fall, typically stream spawners.	Raleigh et al. 1986
Cutthroat trout	Habitat preferences are similar to rainbow trout. Cutthroat tend to occupy headwater stream areas when other trout are present in the same river system.	Spring, stream spawners.	Hickman and Raleigh 1982
Brook trout	Habitat preferences are similar to other trout species except that they are quite adaptable to a headwater streams, large rivers, ponds, and large lakes. Species is most commonly found in headwater streams.	Fall, stream spawners but utilize spring upwelling areas of lakes and ponds.	Raleigh 1982
Largemouth bass	Riverine habitat preferences include large, slow-moving rivers or pools of streams with soft bottoms and some aquatic vegetation. Lake/reservoir habitat conditions include excessive shallow areas with submergent vegetation and some deeper water.	Spring, usually in lakes/reservoirs.	Stuber et al. 1982
Northern pike	Habitat consists of lakes/reservoirs with backwater areas or large rivers with pools.	Spring, vegetated areas with shallow depths and no current.	Inskip 1982

Trends

Limited information is available to make documented statements about trends in aquatic habitat quality or fish populations in the Ely District. Habitat surveys have been conducted by the Nevada Department of Wildlife and the BLM in some streams during the past 5 years, but in most cases, previous data are lacking for comparison and trend analysis (Crookshanks 2003). Stream segments on BLM-administered land exhibit varying habitat conditions from low to moderate quality habitat. Fish population numbers are not monitored or censused on a frequent basis. Most of the streams listed in **Table 3.6-1** maintain viable fish populations through natural spawning. Stream stocking only occurs in upper White River, Cleve Creek, and Steptoe Creek, which is used to supplement natural spawning in these popular fishing streams.

Threats to native and nonnative fishes in the planning area include habitat alterations, water depletions, disease, predation, competition, and hybridization. Climatic events involving drought have contributed to reduced water levels for aquatic species.

Current Management

In Nevada, fish species and their habitat in public waters are managed by the Nevada Department of Wildlife in cooperation with the BLM. The Nevada Department of Wildlife determines the species being managed (both game and nongame) and the management policies involving fishing regulations and habitat protection. Management direction and guidance is provided by Nevada Administrative Code, Chapter 503 – Hunting, Fishing and Trapping/ Miscellaneous Protective Measures. The Federal Land Policy and Management Act of 1976 also states that public lands will be managed in a manner "...that will provide food and habitat for fish and wildlife..." Beneficial use for aquatic life is included in all Nevada water quality classifications (A, B, C, and D) (see Section 3.3, Water Resources). The Recreational Fisheries Conservation Plan Implementation Strategy (Implementation Memorandum WO-97-053) also identified a goal to increase fishing opportunities nationwide through conservation, restoration, and enhancement of aquatic systems and fish populations by increasing fishing access, education, and partnership opportunities.

The Nevada Department of Wildlife has prepared fisheries management plans for several reservoirs (Cold Creek and Illipah) that are bordered by BLM land or have adjacent recreational facilities maintained by the BLM (Nevada Department of Wildlife 1996; Haskins 1989). Trout species are managed using various coldwater fishery concepts under the *Nevada Coldwater Fishery Program Management Concepts*. Fishery management concepts for these reservoirs are listed in **Table 3.6-3**.

Stocking efforts have involved trout releases in a selected number of reservoirs and stream segments such as rainbow trout in Cave Lake, Cleve Creek, Steptoe Creek, White River, Comins Lake, Illipah Reservoir, and Cold Creek Reservoir in White Pine County (Nevada Department of Wildlife 2003a,b). No recent stocking has been done in water bodies on BLM-administered land in Lincoln County. In 2003, Nevada Department of Wildlife stocked rainbow trout and brown trout in Eagle Valley and Echo Canyon reservoirs. Some of these fish may be washed downstream (e.g., to Meadow Valley Wash). Limited fishing exists in the Meadow Valley Wash segments bordered by BLM-administered land.

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Table 3.6-3
Reservoir Fishery Management

Reservoir	Concept	Objectives
Cold Creek	Quality Fishery	Meet harvest objectives of 0.5 fish per hour (2 fish per day) with harvested fish being 50 percent larger than stocking size, while maintaining carryover of 30 percent of the year's stocked fish.
Illipah	General Quality Fishery	Meet harvest rates of 2.0 to 2.5 fish per angler and 0.5 to 0.75 per hour, with harvested fish being 75 percent larger than stocking size (and 25 percent being at least 50 percent larger than stock size). Harvest rates should be attainable in all but low water years.

3.6.2 Wildlife

Existing Conditions

A diversity of wildlife resources typical of the Great Basin and the Mojave Desert ecological systems occupy a variety of wildlife habitats on the Ely District. The vegetation types or communities that comprise the primary wildlife habitats on the District include sagebrush, pinyon-juniper woodland, and salt desert shrub. Other, less abundant wildlife habitats that occur on the District include high elevation conifer/aspen forests, Mojave Desert shrub, and riparian/wetland habitats (see Section 3.5, Vegetation). The riparian habitat associated with wetlands and perennial stream channels is considered the highest value habitat for area wildlife. Available water for wildlife consumption and riparian vegetation for cover, breeding, and foraging are the predominant limiting factors for wildlife on the District. Therefore, riparian habitats, particularly those with multistoried canopies and open (free) water, typically support a greater diversity and population density of wildlife than the drier, upland habitats.

Surface water sources potentially available to wildlife are described in Section 3.3, Water Resources. Riparian and associated wetlands range from lower-elevation lakes, streams, wetlands, stock ponds, or isolated springs that primarily are composed of small, narrow drainages or moist soils with scattered patches of emergent vegetation to higher-elevation springs that maintain a greater-value riparian habitat for wildlife use. Important habitat characteristics for wildlife include the amount of open water; the extent of both woody and herbaceous vegetation for cover, foraging, and breeding activities; the quality of plant communities relative to the long-term use by wildlife (i.e., community longevity); and the diversity of plant species present.

Big Game. Big Game species within the Ely District consist primarily of Rocky Mountain elk, mule deer, pronghorn antelope, and desert bighorn sheep. Other big game species within the District include Rocky Mountain bighorn sheep, mountain goat, and mountain lion.

Rocky Mountain Elk. Rocky Mountain elk occur in a wide variety of habitats from mid to upper elevations within the District. Summer habitats include ponderosa pine, white-fir, mixed conifer, Engelmann spruce, aspen, and higher elevation pinyon-juniper woodlands and meadows above 6,200 feet in elevation. Winter habitat consists primarily of pinyon-juniper woodlands and sagebrush-grasslands between 6,200 and 9,500 feet in elevation. Pinyon-juniper, aspen, mixed-



Elk at Guzzler
Photo by BLM

conifer forests, and mountain mahogany provide thermal and escape cover. Shrub species, including antelope bitterbrush and sagebrush, also provide important cover and forage for elk. Although elk forage largely on grass species, they also consume a wide variety of forbs and shrubs (BLM 2001b). Important elk ranges within the District are presented in **Map 3.6-1**.

Introduction efforts for Rocky Mountain Elk resulted in a series of releases in White Pine County, with the first release of Yellowstone elk occurring in 1932. Augmentation releases occurred in the late 1980s, early 1990s, and in 2001. Elk also are reported to have immigrated into the District from transplanted populations in western Utah (Lincoln County Elk Management Technical Review Team 1999b). Elk presently occupy many mountain ranges within the District. The largest herd occurs in the Egan and Schell Creek ranges of the Nevada Department of Wildlife Management Areas 11 and 22. Since the late 1990s, elk populations in Lincoln and White Pine counties have been managed under the guidance of the Lincoln and White Pine Elk Management Sub-plans to the Statewide Elk Species Management Plan. These management sub-plans established population objectives by management unit.

Pronghorn Antelope. From 1950 to 2003 Nevada Department of Wildlife has released a total of 2,310 pronghorn antelope in White Pine, Lincoln, and Nye counties. Currently, pronghorn are found in all major valleys in White Pine County, and in the central and northern portions of Lincoln and Nye counties within the District (Nevada Department of Wildlife 2003c). Pronghorn prefer gently rolling to flat topography that provides good visibility of the surrounding area. The majority of Nevada's pronghorn inhabit Great Basin sagebrush/grassland habitat types. Water is a key component of pronghorn habitat. The amount of drinking water required for pronghorns is related both to maximum air temperatures and the amount of moisture in the forage (Nevada Department of Wildlife 1983). Pronghorn diet consists of grasses, forbs, and browse plants. Within the Ely District, pronghorn depend on sagebrush for both food and cover. Other important forage include sagebrush, antelope bitterbrush, saltbush, rabbitbrush, cheatgrass, Indian ricegrass, crested wheatgrass, and shadscale. During the summer, pronghorn are widely distributed throughout the valleys and mountain foothills and primarily are associated with low sagebrush habitat with mixed vegetation (i.e., grasses, forbs, and shrubs). Important pronghorn ranges within the District are presented in **Map 3.6-2**.

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Mule Deer. Mule deer are widespread within the District and typically are associated with middle to upper elevations. Habitat for mule deer within the District includes big sagebrush, low sagebrush, shadscale, and grasslands. Deer generally are classified as browsers, foraging primarily on forbs and shrubs. However, the importance of forage type tends to vary by season and climate. Forbs and grasses are an integral part of the mule deer diet during the spring and fall growth seasons when succulence is greatest. Shrubs are utilized more heavily during dry summer and winter periods. Important forage on range for mule deer includes snowberry, sagebrush, serviceberry, antelope bitterbrush, and mountain mahogany. Mountain mahogany and pinyon-juniper woodlands are important for thermal and escape cover during winter. During summer, mule deer tend to rely on riparian and mountain sagebrush communities. Important mule deer ranges within the District are presented in Map 3.6-3.

Desert Bighorn Sheep. Typical desert bighorn sheep habitat consists of rough, rocky, and steep terrain, broken by canyons and washes. Bighorn sheep require access to freestanding water during the summer months, and throughout the year during drought conditions. The diet of bighorn sheep consists primarily of grasses, shrubs, and forbs. Preferred species include squirreltail grass, galleta grass, big sagebrush, winterfat, shadscale, and Mormon tea (Nevada Department of Wildlife 1978).

Historically, the desert bighorn occupied suitable habitat in all 17 counties throughout Nevada. However, due to a multitude of various land and resource uses associated with the westward expansion of humans, desert bighorns became extirpated from much of their range in Nevada. By 1960, the distribution of desert bighorns was restricted to five counties in Nevada including Clark, Lincoln, Nye, Esmeralda, and White Pine. Of the remaining desert bighorn populations, those considered the most significant were located in Clark and Lincoln counties. In 1936, 1.5 million contiguous acres were established in these two counties as the Desert National Wildlife Range to primarily benefit desert bighorn conservation. In addition to establishing the Desert National Wildlife Range, considerable funding and effort has been expended in subsequent decades by state and federal agencies, as well as private organizations, to stabilize and expand Nevada's bighorn sheep populations. These efforts include habitat enhancement projects within potentially suitable habitat.

From the late-1980s to present, the Nevada Department of Wildlife has been reintroducing desert bighorn sheep into a number of mountain ranges within the District including the Pahrnagat, Egan, Hiko, South Pahroc, and the Delamar ranges (Scott 2004). These releases were conducted as a result of a number of habitat management plans that evaluated bighorn sheep habitat suitability for potential reintroduction or augmentation on the Ely District (Nevada Department of Wildlife 1987, 1989, 1991; BLM 1987). Subsequent to the releases, sheep have expanded their distribution to the Mount Irish Range. The primary limiting factor to the success of these reintroductions is the spread of disease from domestic sheep that graze in areas adjacent to reintroduction sites (Scott 2004). Potential bighorn sheep habitat within the District is presented in Map 3.6-4.

Rocky Mountain Bighorn Sheep. Rocky Mountain bighorn sheep prefer high, steep rocky slopes that are in close proximity to suitable feeding sites. Primary forage includes grasses, grass-like plants, forbs, and shrubs. Twelve Rocky Mountain bighorn sheep were reintroduced to Mount Grafton in the late 1980s. To

date, limited populations of Rocky Mountain bighorn sheep occur on Mount Moriah and Mount Wheeler in White Pine County, and on Mount Grafton in Lincoln County.

Mountain Goat. Mountain goat habitat consists of steep rocky cliffs, projecting pinnacles, ledges, and talus slopes. Mountain goats are limited to the northwestern-most portion of the Ely District boundary in the southern reaches of the Ruby Mountains (Nevada Department of Wildlife Management Unit 103) on U.S. Forest Service-administered lands and in the vicinity of Bald Mountain (Nevada Department of Wildlife Management Unit 108).

Mountain Lion. Mountain lions occupy the higher mountain elevations within the Ely District, but will move down into the lower elevations following the resident mule deer populations. This species is managed as a game species by the Nevada Department of Wildlife and are controlled as a predator species by the Animal and Plant Health Inspection Service. From 2002 to 2003, the Ely District accounted for 46 mountain lions and approximately 32 percent of the statewide mountain lion harvest. The average mountain lion harvest within the District from 1998 to 2003 was 67 lions and approximately 41 percent of the statewide harvest.

Small Game. Upland game birds that occur within the Ely District include greater sage-grouse, blue grouse, chukar partridge, Gray (Hungarian) partridge, mourning dove, Gambel's quail, and Rio Grande turkey. Although the greater sage-grouse is a small game species, it also is considered a special status species and is discussed in Section 3.7, Special Status Species.

Blue grouse occupy open stands of conifer or aspen with an understory of brush. Winter habitat consists of dense conifers at higher elevations. Chukar partridge occur at lower elevations and typically are associated with more rugged slopes, canyons, and drainages in proximity to open water. The limiting factor for chukar is water availability during the late summer months when daytime temperatures are at their maximum and water is least available. The gray (Hungarian) partridge is considered widespread but not common and is associated with grassland, shrubland, and agricultural areas. Mourning dove is one of the more commonly observed game species within the District, particularly during the spring, summer, and early fall. Mourning dove typically prefer habitats in close proximity to sources of open water. Gambel's quail occur in scrublands and brushy thickets of the Mojave Desert ecological system, and in agricultural areas. Rio Grande turkey releases within the District boundary have occurred in southern Lincoln County since early 1999. However, because brood surveys have not been conducted in Lincoln County, the status of this species is unknown (Nevada Department of Wildlife 2003d). Recently, releases also have occurred on the east side of the Snake Range near Baker in White Pine County. Rio Grande turkeys prefer riparian woodlands associated with oak-pine and pinyon-juniper woodlands.

Small game mammal species that are found in the study area include pygmy and cottontail rabbits and black-tailed jackrabbits.

Common waterfowl that occupy open water and wetland habitats within the District include American coot, mallard, green-winged teal, and Canada geese. Other waterfowl that occur on the District include gadwall, pintail, and a variety of diving ducks (e.g., lesser scaup, canvasback, and redhead).

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Furbearers that occur within the District include bobcat, beaver, muskrat, coyote, red fox, gray fox, and kit fox.

Nongame Species. A diversity of nongame species (e.g., small mammals, raptors, passerines, amphibians, and reptiles) occupy a variety of trophic levels and habitat types within the Ely District. Nongame mammal species in the study area include a variety of shrews, bats, ground squirrels, rabbits, woodrats, and mice. These small mammals provide a substantial prey base for area predators including mammals (e.g., coyote, fox, badger, skunk), raptors (e.g., eagles, hawks, and owls), and reptile species.

Some of the more common bird species that occur within the planning area include a wide range of neotropical migrant species such as sage thrasher, lark sparrow, Brewer's sparrow, and chipping sparrow. These bird species are considered integral to natural communities and commonly are viewed as environmental indicators based on their sensitivity to environmental changes caused by human activities. Other bird species that occur within wetland habitats include American bittern, killdeer, common snipe, long-billed curlew, American avocet, willet, and a variety of sandpiper species.

Many raptor species also are known to breed within the Ely District including eagles (golden eagle), falcons (prairie falcon, American kestrel, and peregrine falcon), accipiters (sharp-shinned hawk, Cooper's hawk, goshawk), hawks (ferruginous hawk, red-tailed hawk, Swainson's hawk), northern harrier, and owls (e.g., great-horned owl, burrowing owl, long-eared owl, and short-eared owl).

Trends

Habitat Trends. In recent years, land management direction, in combination with long-term climatic shifts and the introduction and spread of noxious weeds and exotic species have resulted in substantial alterations of wildlife habitats and degraded rangeland within the Great Basin and Mojave Desert ecological systems (Dobkin et al. 1998; Fleischner 1994).

The sagebrush community provides food and cover for about 100 bird species, 70 mammal species, and 23 amphibian and reptile species, including a number of important game species (e.g., mule deer, pronghorn, Rocky Mountain elk, Rocky Mountain bighorn sheep, sage grouse, Gray partridge, and valley quail) within the District region (BLM 2000a). However, with the establishment of cheatgrass and other exotic vegetation (e.g., red brome, and medusa head) over the last 25 years (West 1994), sagebrush and other shrub communities such as salt desert scrub, have been converted to an exotic dominated environment that provides little or no food for wildlife (BLM 2001d; 1999). Rowland (2003) estimates that approximately 3.06 million acres of vegetation (including 1.11 million acres of sagebrush vegetation) is at risk of displacement from cheatgrass invasion on the Ely District. Conversely, some sagebrush communities at mid to low elevations have stagnated as late phase sagebrush communities, resulting from decades of altered fire regimes and poor grazing management. Because of altered fire regimes and poor grazing management within sagebrush communities, the overall habitat trends are a loss or reduction of important grass and forb species for wildlife consumption and a reduction in overall habitat quality for wildlife that depend on these resources. In addition, displacement of sagebrush by the expansion of pinyon-juniper

woodlands has placed additional stress on the sagebrush ecological system, which has been severely reduced in area and degraded in habitat quality (Connelly et al. 2004) (see **Map 4.5-2**). It is estimated that the Ely District has the largest amount of sagebrush (greater than 1.41 million acres) managed by the Nevada BLM that is at high risk of displacement from pinyon-juniper (Rowland 2003).

As discussed in Section 3.5, Vegetation, recent trends within the pinyon-juniper woodland community include increasing age and density of trees, increasing establishment of woody species within ecological conditions that typically support shrub-dominated and grassland communities, and decreasing herbaceous understory as a result of increased tree density. Although these trends benefit species that occur primarily in woodland habitats, these trends also lead to loss in forage (grass and forb) production within dense stands and a reduction of species diversity.

As discussed above, riparian habitat is considered the highest value habitat for area wildlife. In the Great Basin region, as elsewhere throughout the intermountain west, riparian habitats are considered crucial centers of biodiversity (Dobkin et al. 1998), providing essential wildlife habitat for breeding, wintering, and migration (Fleischner 1994). One of the most substantial riparian habitats on the District is Meadow Valley Wash, which drains through both the Great Basin and Mojave Desert ecological systems. Declines in native riparian habitats throughout the west and Great Basin are attributed to extensive livestock grazing (both past and present), wild horse use, water developments that divert water, and invasive weeds.

Species Trends.

Elk. In general, elk have been increasing both numerically and geographically throughout the District with slight to moderate upward trends depending on the management area. However, except for Unit 24, which is included in the latest planning effort being conducted by the Lincoln County Elk Management Technical Review Team, populations remain within the objectives of the management plans.

Mule Deer. Mule deer have experienced declining trends throughout the District. Contributing factors to declining population trends include habitat degradation, pinyon-juniper increase, invasive species, poorly managed grazing, wildfire, and drought (Wasley 2004).

Pronghorn. Pronghorn populations within the District have experienced static to upward trends over the last 10 years. However, the prolonged drought conditions have slowed population growth or resulted in slightly declining pronghorn population trends on the District.

Desert Bighorn Sheep. Desert bighorn sheep populations have experienced a slight downward trend from 2002. This trend is attributed to severe drought conditions that have resulted in an overall reduction in lamb recruitment (Nevada Department of Wildlife 2003e). Overall, desert bighorn sheep populations remain well below historic levels and distribution.

Rocky Mountain Bighorn Sheep. Rocky Mountain bighorn sheep populations in the Snake Range in White Pine County are stable at low population numbers. However, bighorn sheep populations on Mount Grafton in Lincoln County have been reduced to only a few individuals (Scott 2004).

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Mountain Lion. The mountain lion population trend in the District is considered to be stable; however, future trends of mountain lions within the District will depend on status and trends of area deer herds (Nevada Department of Wildlife 2003a).

Small Game and Non-game Species. Data currently are not available for small game or non-game species population trends. However, in general, these species' populations fluctuate in response to habitat trends, which are discussed above. Greater sage-grouse and pygmy rabbits are discussed under Section 3.7.3, Special Status Species, under Wildlife.

Current Management

Populations of wildlife game species and furbearers are managed by the Nevada Department of Wildlife. The Nevada Department of Wildlife determines the species being managed and the management policies involving hunting regulations and habitat protection. Management direction and guidance for wildlife is provided by the Nevada Administration Code, Chapters 502, 503, and 504, and Nevada Revised Statutes 502, 503, and 504.

Management guidelines and objectives for elk management within the District are presented in the White Pine County and Lincoln County Elk Management Plans (Lincoln County Elk Management Technical Review Team 1999). These management plans present short- and long-term management actions and strategies that are designed to meet the requirements of an elk management sub-plan as referenced in Assembly Concurrent Resolution Number 46.

Management guidelines and objectives for desert bighorn sheep are presented in the Meadow Valley – Arrow Canyon – Delamar Habitat Management Plan (Nevada Department of Wildlife 1991), the Pahrangat Habitat Management Plan (Nevada Department of Wildlife 1989), the North Hiko Range Habitat Management Plan (BLM 1987), and the South Hiko Habitat Management Plan (Nevada Department of Wildlife 1987). Current management for desert bighorn sheep is focused on managing historic remote summer habitat as yearlong habitat since lower elevation winter habitat currently is inadequate for wintering sheep because of existing land management practices.

Guidelines for pronghorn management are presented in the Policy for the Management of Pronghorn Antelope (Nevada Department of Wildlife 2003g).

Migratory birds are protected under the Migratory Bird Treaty Act (16 U.S. Code 703-711) and Executive Order 13186 (66 Federal Register 3853). A list of Birds of Conservation Concern was developed as a result of a 1988 amendment to the Fish and Wildlife Conservation Act. This Act mandates that the U.S. Fish and Wildlife Service "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973." The goal of the Birds of Conservation Concern list is to prevent or remove the need for additional Endangered Species Act bird listings by implementing proactive management and conservation actions. As a result, Birds of Conservation Concern species would be consulted on in accordance with

Executive Order 13186 (U.S. Fish and Wildlife Service 2002a). A total of 29 Birds of Conservation Concern potentially could occur within the Great Basin ecological system of the Ely District, and 28 Birds of Conservation Concern potentially could occur within the Mojave Desert ecological system of the District (U.S. Fish and Wildlife Service 2002a).

Partners in Flight is a multi-faceted organization with the goal of documenting and reversing population declines of neotropical migratory birds and improving their habitats. Partners in Flight Priority Bird Species that potentially could occur within plant communities on the Ely District are identified in the Nevada Partners in Flight Bird Conservation Plan (Nevada Partners in Flight 1999).

A draft Memorandum of Understanding among the BLM, U.S. Forest Service, and U.S. Fish and Wildlife Service was drafted pursuant to Executive Order 13186 to promote conservation and protection of migrating birds. Specific measures to protect migratory bird species and their habitats have not been identified within the Executive Order document, but instead, the Executive Order provides guidance to agencies to promote best management practices for the conservation of migratory birds. As a result, the Nevada State BLM prepared Migratory Bird Best Management Practices for the Sagebrush Biome to assist BLM field offices in the consideration of migratory birds in land management activities (BLM [no date]).

3.7 Special Status Species

Special status species are those species for which state or federal agencies afford an additional level of protection by law, regulation, or policy. Included in this category are federally listed and federally proposed species that are protected under the Endangered Species Act, species considered as candidates for such listing by the U.S. Fish and Wildlife Service, BLM sensitive species, and species that are state protected.

In accordance with the Endangered Species Act, the lead agency in coordination with the U.S. Fish and Wildlife Service must ensure that any action they authorize, fund, or carry out would not adversely affect a federally listed threatened or endangered species. In addition, as stated in Special Status Species Management Policy 6840 (6840 Policy) (Rel. 6-121), it is BLM policy "to conserve listed species and the ecological systems on which they depend, and to insure that actions requiring authorization or approval by the BLM are consistent with the conservation needs of special status species and do not contribute to the need to list any special status species, either under the provisions of the Endangered Species Act or other provisions" identified in the 6840 Policy. It also is BLM policy to rely on the Nevada Natural Heritage Program database for current status and distribution records of special status species on the District. The BLM as the lead federal agency for the proposed RMP revision is preparing a Biological Assessment for submittal to the U.S. Fish and Wildlife Service in accordance with Section 7(c) of the Endangered Species Act.

3.7.1 Plant Species**Existing Conditions**

A total of 34 special status plant species, including two federally listed species, are known or suspected to occur in the Ely District (see Table F-1 in Appendix F). These plant species occur in a variety of vegetation communities and in a variety of geographic habitats within the District. Many are found on distinctive soil types, such as badlands or gypsiferous soils, or in association with unique vegetation communities, such as riparian areas. Approximately two-thirds primarily are associated with the southern portions of the District within Major Land Resource Areas 29 and 30. Approximately half of the District's sensitive plants are found within habitat types known in the Mojave Desert and transition zone to the north, such as the salt desert shrub and creosote-dominated communities. Approximately 50 percent are associated with pinyon-juniper woodland or sagebrush complexes. A small number are known to occur on rock outcrops, ledges, cliffs, and other barren areas. Although a preponderance of these rare plant species are located in hot desert ecological systems, only one is a member of the cactus family.

Federally Listed Species

Ute ladies'-tresses. Ute ladies'-tresses (*Spiranthes diluvialis*) typically inhabit moist, sub-irrigated, or seasonally flooded soils at elevations between 1,800 and 6,800 feet (U.S. Fish and Wildlife Service 1995). A wide variety of soils are inhabitable by the Ute ladies'-tresses including sandy or coarse cobbly alluvium to calcareous, histic or fine-textured clays and loams. Suitable soils can be found in locations such as valley bottoms, gravel bars, or floodplains along springs, lakes, rivers, or perennial streams. Sites where Ute

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ladies'-tresses are known to occur are characterized by short vegetation cover and periodic exposure to disturbances like flooding or livestock grazing.

The Ute ladies'-tresses was listed as federally threatened in 1992. This species does not have designated critical habitat (57 Federal Register 2048). Records document a historic population of Ute ladies'-tresses within the planning area that once occupied a wet meadow adjacent to the Meadow Valley Wash just north of Panaca in Lincoln County (U.S. Fish and Wildlife Service 1995). Heritage data indicates that this population occurred on private land. However, the precision of the mapped coordinates is classified as reliable only to the minute level, and therefore, there is some uncertainty regarding the location record for this species. Despite searches, there have been no observations of this population since 1936 (U.S. Fish and Wildlife Service 1995). This population is the westernmost known occurrence of this species. The extirpation of this population in Nevada and several others in Utah and Colorado caused genetic losses that most likely led to its need for federal protection.

There are 21,835 acres of riparian habitat in the planning area. It is unknown how much of this area is suitable or potential habitat for the Ute ladies'-tresses.

Federal Species of Concern

Sunnyside green gentian. The sunnyside green gentian (*Frasera gypsicola*) typically inhabits dry, open areas at elevations between 5,180 and 5,510 feet. A wide variety of soils are inhabitable by the sunnyside green gentian including whitish, alkaline, often salt-crusts or spongy silty-clays. Suitable soils can be found in locations such as calcareous flats and barrens, with little if any gypsum content. Sites where the sunnyside green gentian may occur would be characterized by sagebrush, greasewood, and occasionally barberry and swamp cedar vegetation (Nevada Natural Heritage Program 2005, Miscow 2005).

There have been three locations where the sunnyside green gentian has been reported in the Ely District. Observations were reported at two sites within Nye County; both in the White River Valley near the White River and at one site in White Pine County, SSW of Lund, Nevada near White River (Nevada Natural Heritage Program 2005, Miscow 2005).

BLM Sensitive Species. The remaining special status species include 32 BLM sensitive species (see Appendix F).

Trends

In general, special status species are those species for which population viability is of concern, based on a current or predicted downward trend in population numbers or density, or habitat capability that would limit a species' distribution. As such, special status species are afforded an additional level of protection by law, regulation, or policy from state and federal agencies.

Little information is available regarding population trends of specific rare plants on the Ely District. The current trend within their associated vegetation communities is described in Section 3.5, Vegetation.

Systematic surveys for the federally listed Ute ladies'-tresses in Nevada have been conducted to monitor trends and distribution, but likely remain incomplete. Based on available sampling results from 1997, estimated individual species numbers and estimated area of occurrence is unknown. Species inventory searches were conducted until 1997; however, no populations have been identified since 1936.

Threats to the Ute ladies'-tresses were identified in the U.S. Fish and Wildlife Service's Draft Recovery Plan (U.S. Fish and Wildlife Service 1995). Factors that have affected these populations include urbanization, river or stream damming, population displacement as a result of weed expansion, heavy summer livestock grazing and hay mowing, and agricultural conversion. Threats to the sunnyside green gentian and BLM sensitive species are considered to be similar to factors identified for federally listed species.

Distribution and occurrence information is available for BLM sensitive species within the planning area (Appendix F). The current trend within their associated vegetation communities is described in Section 3.5, Vegetation.

Current Management

The management of rare plants on BLM-administered lands occurs under existing policy. Under the Endangered Species Act, consultation with the U.S. Fish and Wildlife Service takes place if federally listed plants or their habitat may be affected by an action. The majority of rare plant management on the District is conducted in response to proposed disturbance activities. This entails field surveys to identify potential impacts and mitigation measures, as needed. Few, if any, general surveys are conducted for inventory or monitoring.

The Recovery Plan for the federally listed Ute ladies'-tresses orchid does not include specific guidelines for management of potential orchid populations or habitat in Nevada. It does recommend that "some type of population and habitat monitoring should be initiated in each watershed until such time as a complete monitoring plan is designed and implemented," and that "drainages, seeps and springs in ... Nevada should be inventoried" (U.S. Fish and Wildlife Service 1995). General threats to sensitive plant populations in the Ely District have been reported to include; illegal collecting, habitat destruction and disturbance associated with resource extraction or utility and road construction, and livestock and wildlife trampling.

No management plan or recovery plan has been developed for the sunnyside green gentian at this time.

Three of the ACECs (Kane Spring, Mormon Mesa, and Beaver Dam Slope) contain sensitive plant species populations. These populations are managed in accordance with the ACEC-specific management prescriptions.

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3.7.2 Aquatic Species

Existing Conditions

The general area encompassing the Ely District provides habitat for seven federally listed fish species (Map 3.7-1). Habitat is present on BLM-administered land for three fish species: Big Spring spinedace (*Lepidomeda mollispinis pratensis*) in Upper Meadow Valley Wash (Condor Canyon), Pahrump poolfish (*Empetrichthys latos*) in the Shoshone Ponds Resource Area, and White River springfish (*Crenichthys baileyi baileyi*) in Ash Springs. Habitat for Hiko White River springfish (*Crenichthys baileyi grandis*), Railroad Valley springfish (*Crenichthys nevadae*), Pahrnagat roundtail chub (*Gila robusta jordani*), and White River spinedace (*Lepidomeda albivallis*) is located on private or state land that is surrounded by or adjacent to BLM-administered land. The BLM would be responsible for any actions on public land that potentially could affect habitat for these federally listed species. The listing designation and distribution of these species are described in Appendix F. Except for Big Spring spinedace, the fish species are mainly associated with springs or pool habitats. Critical habitat has been designated for all of the fish species except Pahrnagat roundtail chub and Pahrump poolfish. A summary of the occurrence and habitat information for the federally listed species is provided below.

Federally Listed Species

Big Spring Spinedace. Originally, the Big Spring spinedace was collected from the outflow stream of Panaca Spring and its adjacent wet meadow near Panaca, Nevada in Lincoln County (U.S. Fish and Wildlife Service 1993). This population was extirpated from these areas due to habitat modification and nonnative fish species introductions. The present distribution of this species is restricted to a 4-mile section of Upper Meadow Valley Wash called the Condor Canyon reach, which is located northeast of Panaca. The boundaries of the occupied habitat area are defined by perennial flow. A barrier falls at the north end of the canyon, which restricts movement. A second falls exists near the Delmue property, where the 2-foot drop represents an impediment to fish movement rather than a barrier. Previous surveys in Upper Meadow Valley Wash showed that the species occurred throughout most of the canyon. The largest numbers were collected in a plunge pool below the barrier falls near the Delmue property. Critical habitat also was designated for the species in a 4-mile section of Meadow Valley Wash (above and within Condor Canyon) in Lincoln County near Panaca, Nevada (U.S. Fish and Wildlife Service 1985).

The primary constituent elements of designated critical habitat for this species include: 1) clean, permanent-flowing, spring-fed habitat with deep pools and shallow marshy areas along the shore; and 2) the absence of nonnative fishes (U.S. Fish and Wildlife Service 1993). Habitat characteristics of occupied habitat in Meadow Valley Wash pool areas with depths of 1 to 3 feet, moderate to slow stream velocities, undercut banks, and floating aquatic vegetation (U.S. Fish and Wildlife Service 1993). Bottom substrate consisted of clay and gravel (Sigler and Sigler 1987).

Railroad Valley Springfish. This species is native to thermal spring systems in Railroad Valley, Nye County, Nevada (U.S. Fish and Wildlife Service 1996). The Railroad Valley springfish is native to only two areas (Lockes Ranch area and Duckwater areas), both of which are located in Railroad Valley, Nevada.

Nine thermal springs have populations of the species, six at Lockes and three at Duckwater. In addition to these populations, there are four springs where this species has been introduced; Chimney Warm Springs (spring and outflow), Hot Creek Canyon (Dugan Ranch), and Sodaville Warm Springs. An introduction at Warm Springs failed. Critical habitat also was designated at the time of listing, which included six springs historically occupied by this species. The locations included the springs along with portions of the outflow streams and marshes, and a 15-meter (50-foot) riparian zone around each of the springs. The springs occur in three locations: 1) Big Warm Spring (T13N, R36E, NE¼ of Section 31, SE¼ of Section 31, and NW¼ of Section 32); 2) Little Warm Spring (T12N, R56E, Section 5); and 3) North Spring, Hay Corral Spring, and Reynolds Springs (T8N, R55E, SW¼ of Section 11, NW¼ of Section 14, SW¼ of Section 14, SE¼ of Section 15, NE¼ of Section 15, and SW¼ of Section 15) (U.S. Fish and Wildlife Service 1996).

Railroad Valley springfish are adapted to survive in spring environments with relatively high water temperatures (86 to 100 degrees Fahrenheit) at the spring source and low dissolved oxygen concentrations (1.5 to 6.0 milligrams per milliliter) (U.S. Fish and Wildlife Service 1996). Constituent elements of designated critical habitat for this species include clear, unpolluted thermal spring waters ranging in temperatures from 840 to 970 degrees Fahrenheit in pools, flowing channels, and marshy areas with aquatic plants, insects, and mollusks. Discharges in occupied springs ranged from <1 to 23 cubic meters/minute (U.S. Fish and Wildlife Service 1996). Most of the discharges were 1 to 5 cubic meters/minute. Current is negligible in the spring pools. The degradation of riparian habitats mainly caused by water diversion, overgrazing, and introduction of exotic fish has contributed to the listing status of the species (Nevada Department of Wildlife 2003a).

Hiko White River Springfish. This species occupies pools in Hiko and Crystal Springs in the Pahranaagat Valley, Lincoln County, and has been introduced into Blue Link Spring in Mineral County, Nevada (U.S. Fish and Wildlife Service 1998). This species was extirpated from Hiko Spring in 1967 but reintroduced in 1984. These springs and their associated open outflows were designated as critical habitat for this species in 1985.

Pahranaagat Roundtail Chub. Historically, Pahranaagat roundtail chub occurred in Crystal Spring, Hiko Spring, Ash Spring, and the Pahranaagat River in Lincoln County Nevada (Stein et al. 2001). The present distribution of this species is limited to a small section of Pahranaagat Creek on private land. No critical habitat has been designated for this species, although this species was included in a recovery plan for aquatic and riparian species in the Pahranaagat Valley (U.S. Fish and Wildlife Service 1998).

Adult and juvenile fish typically inhabit pools below riffle areas, but adults also utilize deeper water with flow. Chub larvae occur in quiet water near the water's surface and near stream banks. Adult fish exhibit seasonal changes in habitat use, with summer habitat consisting of deeper and slower water in comparison to the spring and winter (U.S. Fish and Wildlife Service 1998).

Pahrump Poolfish. This species was originally called the Pahrump killifish, but it was assigned the common name "poolfish" in 1991. Historically, separate populations occurred in three springs in Pahrump Valley in Nye County. Two of these populations are extinct (Pahrump Ranch and Raycraft Ranch). The Manse Ranch Spring population also disappeared in 1975, but it was transplanted to other sites to provide

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refugia populations. Presently, introduced populations exist in Corn Creek Springs (Clark County), an irrigation reservoir fed by Sandstone Spring (Clark County), and Shoshone Springs (White Pine County). The Shoshone Ponds Native Fish Refugium in Spring Valley, White Pine County, was established in the 1970s as a cooperative effort between Nevada Department of Wildlife and the BLM to assist in the conservation and recovery of native fishes (Nevada Department of Wildlife 2003). It consists of three small spring-fed ponds within a fenced enclosure, and a larger earthen pond (referred to as Stock Pond) located outside of the enclosure. Pahrump poolfish are present in three of the four ponds (North Shoshone, Middle Shoshone, and Stock Ponds). No critical habitat has been designated for Pahrump poolfish, but a recovery plan was prepared in 1980 (U.S. Fish and Wildlife Service 1980).

Habitat for this species consists of shallow thermal springs and their outflow areas. In native springs inhabited by this species, larger individuals also utilized deeper waters in open water areas (U.S. Fish and Wildlife Service 1980). Young fish tend to utilize shallow areas with vegetation. During the breeding period, females seek seclusion in more remote areas of the spring. Fry usually remain near the bottom or adjacent to substrates for protection from predators (U.S. Fish and Wildlife Service 1980).

White River Spinedace. Historically, the White River spinedace occurred in the White River near the confluence with Ellison Creek in White Pine County and below Adams-McGill Reservoir in Nye County (U.S. Fish and Wildlife Service 1994a). Historic distribution also included springs in White County (Preston Big, Cold, Nicholas, and Arnoldson) and Nye County (Flag). The present distribution for this species is limited to Flag Springs and the upper portion of Sunnyside Creek, which includes a series of three springs and stream segment located in the Kirch Wildlife Management Area (U.S. Fish and Wildlife Service 1994a). Critical habitat was designated for three springs and their outflows plus the surrounding land areas at a distance of 15 meters (Preston Big Spring and Lund Spring in White Pine County and Flag Springs in Nye County).

Historically, White River spinedace occupied stream and spring habitats in northern portion of the White River. The species now persists only in spring habitat. Observations in spring habitat occupied by this species included clear, cool water temperatures; open pools with aquatic vegetation; and bottom substrates consisting of gravel, sand, and mud (U.S. Fish and Wildlife Service 1994a). No information is available concerning habitat used by White River spinedace in riverine areas of the White River.

White River Springfish. Historic and the present distribution of White River springfish are restricted to Ash Springs and its outflow in Pahrangat Valley, Lincoln County, Nevada. The majority of the population is found in the pool; however, fish occasionally occur in the outflow stream (Tuttle et al. 1990). Designated critical habitat includes Ash Springs (Lincoln County, Nevada), its outflow, and the surrounding land for a distance of 50 feet (U.S. Fish and Wildlife Service 1998).

Constituent elements of the designated critical habitat consist of warm water springs and their outflows and the adjacent riparian area, which provides cover and invertebrate food sources. Specific habitat characteristics in Ash Springs include a relatively large pool (0.2 mile in length) with depths ranging from approximately 1.6 to 6.6 feet. The pool contains dense submergent vegetation and sand and silt bottom substrates. Water temperatures range from approximately 88 to 97 degrees Fahrenheit and the mean discharge is 0.56 cubic feet/second. Adult White River springfish occur at depths ranging from

approximately 1.3 to 5.6 feet, but they prefer depths of 3.6 feet or greater. Juvenile fish tend to use shallower water (average of 2.1 feet).

BLM Sensitive Species

Fish. In total, 17 additional BLM-sensitive fish species occur within the planning area (Appendix F). The state-protected and BLM-sensitive fish species lists are the same except for the addition of two BLM-sensitive species (Bonneville cutthroat trout and Meadow Valley Wash speckled dace). All of these fish species are native to Nevada. Bonneville cutthroat trout and the sucker and some of the dace species (e.g., White River speckled dace and Meadow Valley Wash speckled dace) are found in stream habitats. The other fish species are mainly associated with springs.

Aquatic Invertebrates and Amphibians. In addition, 13 BLM sensitive aquatic invertebrates (i.e., proposed species of concern) and 3 amphibian (Columbia spotted frog, northern leopard frog, and southwestern toad) are present in the Ely District. The invertebrate species include the Pahranaugat naucorid bug and 12 springsnails or snails (see Appendix F). All of these species are found in spring habitats.

The Columbia Spotted Frog is known to occur from one location within the Ely District, which is the Spring Creek Flat area of White Pine County (approximately 1.5 miles northeast of the Town of Eightmile, Nevada, on West Deep Creek (Nevada Natural Heritage Database 2004). This species utilizes wetland habitats in low elevation shrublands and grasslands within the study area. This population is considered part of the west desert population, which is not a Federal candidate at this time. There is a conservation agreement for this species.

Trends

Standardized sampling for federally listed fish species in Nevada has been conducted by the Nevada Department of Wildlife to monitor population trends and distribution (Hobbs et al. 2003; Stein et al. 2001; Stein et al. 2000). Based on available sampling results, population trends are noted in **Table 3.7-1**. Sampling has continued in 2003 and 2004 for most of these species.

Threats to federally listed fish species were identified in the recovery plans (U.S. Fish and Wildlife Service 1980, 1993, 1994a,b, 1996, 1998). Factors that have affected these populations include habitat alterations, water depletions, hybridization, disease, predation, and competition. Habitat alterations have resulted from stream channel changes, overly intense, prolonged, or poorly timed grazing, crop production in adjacent land, and water withdrawals for irrigation and domestic purposes. Introduced nonnative fish species have adversely affected populations of listed fish species due to competition for food and available habitat, transfer of parasites and diseases, and predation. Threats to state-listed and BLM sensitive species are considered to be similar to factors identified for federally listed species.

Distribution and occurrence information is available for BLM-sensitive springsnails within the planning area (Appendix F). However, no systematic or frequent sampling has been conducted for invertebrate species to

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Table 3.7-1
Summary of Population Sampling for Federally Listed Fish Species

Species	Years	Sampling Results
Big Spring spinedace	1999-2002	Species is present in the upper portion of Condor Canyon, with the highest densities occurring above Condor Canyon near Delmue Bridge. Population estimates have fluctuated (7,652 in 1999, 4,294 in 2000, 8,721 in 2001, and 8,984 in 2002).
Pahrump poolfish	1989, 1997-2002	Species is present in four ponds in the Shoshone Ponds Native Fish Refugium. Population estimates (without variance statistics) have decreased in North Shoshone Pond from approximately 450 in 1989 to 230 in 2001. Population estimates (without variance statistics) have fluctuated in South Shoshone Pond compared to 1989 (ranging between approximately 250 and 600 fish). Population estimates (without variance statistics) have decreased since 1997 in Middle Shoshone Pond (1,700 in 1997 to 1,300 in 2002). Population estimates (without variance statistics) have increased in Shoshone Stock Pond from approximately 1,700 in 1997 to 1,300 in 2002. Low of 480 fish in 2000.
White River springfish	2001	Snorkel survey indicated 600 fish present in 2001. No sampling was conducted in 2002.
Hiko White River springfish	1985-2002	Population numbers (without variance statistics) have ranged from approximately 1,000 in 1985 to 6,000 fish in 2000 and then decreased to 1,200 fish in 2002.
White River spinedace	1991-2002	Population estimates increased from a low of 40 fish in 1991 to 1,573 fish in 1999. Recent estimates in 2002 were 914 (March) and 1,264 fish (September).
Pahranagat roundtail chub	1997-2001	Trend in population numbers has declined from 568 fish in 1997 to less than 10 fish in 2002 in a 0.25-mile section downstream of Ash Springs. No recent sampling has been done because of access restriction.
Railroad Valley springfish	1996-1998	Population estimates in Big Warm Spring in 1997 and 1998 were approximately 500 to 1,000 fish. Population numbers in Little Warm Spring have decreased from 3,524 in 1996 to 2,418 fish in 1998. No sampling was conducted in 1999 through 2002.

provide information on trends (Sjöberg 2004). As part of the Nevada Department of Wildlife's management for native species, protection of springs and their associated stream segments are important.

Habitat conditions in Condor Canyon were adversely affected by a major rangeland fire in 1999. Effects of the fire included loss of riparian vegetation, increased sedimentation from surrounding upland areas, and expansion of emergent vegetation (mostly cattails) into the channel. Tamarisk is expanding in the riparian

area but it is not considered severe and could likely be controlled with short-term measures (Hobbs et al. 2003). A Habitat Restoration Plan is being implemented to improve habitat conditions.

Current Management

Management of sensitive aquatic species depends on their listing status. Federally listed species are regulated by the U.S. Fish and Wildlife Service under the Endangered Species Act and managed by the Nevada Department of Wildlife. The BLM must follow the requirements of the Endangered Species Act to protect the listed species and their habitat. The BLM also manages their lands to protect Nevada BLM sensitive and State of Nevada listed species as described in BLM Manual 6840. Management guidance for the sensitive fish species is provided in recovery plans and habitat management plans (Table 3.7-2). In addition, the BLM is involved with Recovery Implementation Teams for the federally listed Pahrnagat Valley fish species, Big Spring spinedace, White River spinedace, and Railroad Valley springfish.

**Table 3.7-2
Management Guidance for Sensitive Fish Species**

Species	Plan/Citation
Big Spring spinedace	Big Spring Spinedace Recovery Plan (U.S. Fish and Wildlife Service 1993); Big Spring Spinedace Monitoring and Nonnative Species Control Plan (Nevada Department of Wildlife 1999a); Big Spring Spinedace Recovery Implementation Plan (Draft) (Nevada Department of Wildlife 1999b); Condor Canyon Habitat Management Plan (Guerrero et al. 1989)
Hiko White River springfish, White River springfish, Pahrnagat roundtail chub, White River speckled dace, White River desert sucker	Recovery Plan for the Aquatic and Riparian Species of Pahrnagat Valley (U.S. Fish and Wildlife Service 1998); White River Valley Native Fishes Management Plan (Nevada Department of Wildlife 2000a), Pahrnagat Valley Native Fishes Management Plan (Nevada Department of Wildlife 1999c)
Pahrump poolfish	Recovery Plan Pahrump Killifish (U.S. Fish and Wildlife Service 1980)
Railroad Valley springfish	Railroad Valley Springfish Recovery Plan (U.S. Fish and Wildlife Service 1996); Railroad Valley Springfish Species Monitoring Plan (Nevada Department of Wildlife 2000b)
White River springfish and Woundfin	White River Spinedace Recovery Plan (U.S. Fish and Wildlife Service 1994a)
Bonneville cutthroat trout	Conservation Strategy and Conservation Agreement (Draft); BLM will review recommendation in the Final Plan.

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3.7.3 Wildlife

Existing Conditions

A total of 60 special status terrestrial species (18 mammals, 31 birds, 5 reptiles, and 6 invertebrates) potentially could occur within the Ely District. These species and their associated habitats are summarized in Appendix F.

Federally Listed Species.

Southwestern Willow Flycatcher. The southwestern willow flycatcher (*Empidonax traillii extimus*) was listed as federally endangered in 1995 (60 Federal Register 10694). The range of this subspecies in Nevada is confined primarily to the southern portion of the state. No designated critical habitat for this subspecies occurs within or near the boundary of the Ely District (62 Federal Register 39129). The final recovery plan for the southwestern willow flycatcher was published in 2002 (U.S. Fish and Wildlife Service 2002).

Data obtained from the Nevada Department of Wildlife indicate that the southwestern willow flycatcher has been documented at eight known locations on the Ely District in Lincoln County. One location occurs at the Pahranaagat National Wildlife Refuge where this subspecies was recorded in 1976, 1979, 1986, 1989, 1990, 1991, and 1994. This subspecies also was recorded at Key Pittman Wildlife Management Area where breeding pairs were detected in 1999, 2000, 2001, 2002, and 2003. Breeding pairs also were detected at Crystal Springs in 2002 and near the town of Ash Springs in 1999, 2000, and 2001. Southwestern willow flycatchers were recorded in 1998 at three sites including a site just southwest of the Delamar Mountains in southern Lincoln County, a site south of the East Mormon Mountains in southern Lincoln County, and a site east of the Fortification Range in northern Lincoln County. A southwestern willow flycatcher also was detected at Lower Meadow Valley Wash in southern Lincoln County in 2002 (Nevada Department of Wildlife 2001, 2002b, 2003g).

Relative to the Ely District, potentially suitable breeding habitat for the willow flycatcher would be limited to riparian shrub and wetland habitat in Lincoln County.

Yuma Clapper Rail. The Yuma clapper rail (*Rallus longirostris yumanensis*) was listed as federally endangered in 1967. A recovery plan for this subspecies was prepared in 1983 (U.S. Fish and Wildlife Service 1983); however, critical habitat has not been designated.

No evidence of the Yuma clapper rail has been documented within the Ely District; however, this subspecies is known to occur along the Virgin River south and west of Lincoln County.

Bald Eagle. The bald eagle (*Haliaeetus leucocephalus*) was downlisted to federally threatened on July 12, 1995, and the U.S. Fish and Wildlife Service has proposed to delist the bald eagle in the lower 48 states (64 Federal Register 36453). Bald eagles also are protected under the Bald Eagle Protection Act of June 8, 1940, as amended, and the Migratory Bird Treaty Act of July 3, 1918, as amended

June 20, 1936, in all states. A recovery plan for this species was prepared in 1982 (U.S. Fish and Wildlife Service 1983); however, critical habitat has not been designated.

No bald eagle nest sites are known to occur within or near the Ely District. As a result, potential occurrence by this species would be limited to migrating and wintering individuals. The robust branches of cottonwoods are preferred habitat for winter roosts. Therefore, potentially suitable roosting habitat for the bald eagle would be limited to approximately 22,000 acres of riparian habitat present on public and private land in the District. Cedar Mountain in Newark Valley has been utilized as winter roosting habitat for the eagle in the past; however, there has been no eagle activity at the site for approximately 3 years. Eagles also were observed in 1982 roosting in a stand of large cottonwoods at Bull Creek Ranch in northern Nye County. However, no birds have been observed at these sites within the last few years.

Desert Tortoise. The desert tortoise (*Gopherus agassizii*) was listed as federally threatened in 1990 (55 Federal Register 12178). A recovery plan for this species was prepared in 1994 (U.S. Fish and Wildlife Service 1994). Critical habitat for the Mojave Desert population of the desert tortoise was designated in 1994 (59 Federal Register 5820). Two designated critical habitat units (Mormon Mesa Unit and Beaver Dam Slope Unit) occur within the study area in southern Lincoln County.

The Nevada Department of Wildlife and the Nevada Natural Heritage Program have documented numerous desert tortoise sightings within the District. There have been several reports of desert tortoise burrows in the lowlands near the mountains from Ash Springs southward along Pahrangat Wash to the Lincoln County line. Sites occupied by desert tortoise are scattered throughout southeastern Lincoln County, with areas of concentration occurring along Kane Springs Wash, Meadow Valley Wash, and the region just south of the Tule Springs Hills.

There are approximately 726,000 acres of potentially suitable desert tortoise habitat in the Ely District, of which approximately 256,000 acres have been designated as critical habitat for this species in southern Lincoln County. Subsequently, three ACECs (Kane Springs, Mormon Mesa, and Beaver Dam Slope) were designated by the BLM to assist in the recovery of the desert tortoise within the Ely District. These ACECs encompass 212,500 acres or approximately 83 percent of the designated critical habitat for the desert tortoise in the District (BLM 2000b) (see Map 3.7-2).

Federal Candidate Species.

Yellow-billed Cuckoo. The yellow-billed cuckoo (*Coccyzus americanus*) is a federal candidate species that formally ranged throughout much of North America from southern Canada to northern Mexico (66 Federal Register 38611). However, the yellow-billed cuckoo has suffered population declines primarily due to the loss of streamside habitat and is declining west of the continental divide (Biota Information System of New Mexico 2002).

There have been six locations where the yellow-billed cuckoo has been reported in the Ely District in Lincoln County. Observations of yellow-billed cuckoo were reported at two sites along Meadow Valley Wash; a breeding pair at one site in 2001 and a single bird at another site in 2002. At Crystal Springs, two breeding

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pairs were reported in 2001. South of Crystal Springs, individual birds were observed at a fourth site in 2000 and 2002. At another site at Ash Springs, four breeding pairs and additional single birds were reported in both 2000 and 2001 (Nevada Department of Wildlife 2003). In 1979, a single cuckoo was reported by the Nevada Department of Wildlife just south of Beaver Dam State Park in extreme eastern Lincoln County.

Potentially suitable habitat for the yellow-billed cuckoo on the District would be limited to approximately 3,100 acres of riparian and wetland.

Federally Petitioned Species.

Greater Sage-grouse. The greater sage-grouse (*Centrocercus urophasianus*) had been petitioned to be federally listed under the Endangered Species Act as a result of the downward trend of local populations and a reduction of habitat (Conservation Planning Team 2001; U.S. Fish and Wildlife Service 2005). However, the U.S. Fish and Wildlife Service has subsequently determined that protection under the Endangered Species Act is not warranted (70 Federal Register 2244). Sage grouse typically occupy sagebrush communities, breeding in relatively open lek sites (or strutting grounds). Leks are established in open areas, 0.2 to 12 acres in size (Conservation Planning Team 2001). Nesting habitat is characterized primarily by Wyoming big sagebrush communities with a 15 to 38 percent canopy cover and a grass-forb understory (Conservation Planning Team 2001). On average, most nests occur within 4 miles of a lek site; however, nesting habitat may occur at greater distances from a lek site for migratory populations (Connelly et al. 2000). Early brood rearing generally occurs close to nest sites. Optimum brood rearing habitat consists of sagebrush stands that are 16 to 32 inches tall with a canopy cover of 10 to 25 percent and a herbaceous understory consisting of grass and forb species (BLM 2000a).

Summer habitat consists of sagebrush mixed with areas of wet meadows, riparian habitat, or irrigated agriculture fields. As habitat begins to dry up, sage grouse broods move to more mesic habitat such as wet meadows where succulent grasses and insects are still available. In Nevada, sage grouse greatly rely on wet areas for their survival since Nevada normally receives less precipitation than other states (Conservation Planning Team 2001). Fall habitat in northeastern Nevada consists of a mosaic of low-growing sagebrush and Wyoming big sagebrush (see **Map 3.5-3**). It is crucial that sagebrush be exposed at least 10 to 12 inches above snow level for wintering sage grouse (Conservation Planning Team 2001). Sagebrush is the primary food source of adult sage grouse; however, forb species are an important food source in spring and early summer and improve successful reproduction in females. Numerous forb species also enhance nest concealment and relative nest success (Policy Analysis Center for Western Public Lands 2002).

BLM Sensitive Species. The remaining special status species include 54 BLM sensitive species (18 mammals, 26 birds, 4 reptiles, and 6 invertebrates) (see Appendix F).

Trends

In general, special status species are those species for which population viability is of concern, based on current or predicted downward trends in population numbers or density, or habitat capability that would limit

a species' distribution. As such, special status species are afforded an additional level of protection by law, regulation, or policy from state and federal agencies.

Specific threats to federally listed wildlife species were identified in the recovery plans (U.S. Fish and Wildlife Service 1982, 1983, 1994, 2002). Factors that have affected these species and their habitat include habitat loss or modification, water diversion or depletions, livestock grazing, establishment of invasive nonnative plants, and human disturbance. Threats to state protected species, BLM sensitive species, and U.S. Fish and Wildlife Service species of concern are considered to be similar to those identified for federally listed species.

A reduction of overall habitat quality in the sagebrush communities on the District as discussed under Habitat Trends in Section 3.6, Fish and Wildlife. Sage grouse populations in Nevada and throughout their range have displayed a substantial downward trend in both numbers and distribution and the sage grouse habitat losses have paralleled the trends in populations (Nevada Department of Wildlife 2003d). Due to population declines throughout their range in the western U.S., including Nevada, the 2001 Nevada Sage Grouse Conservation Strategy was developed to achieve two major goals: 1) create healthy, self sustaining sage grouse populations that are well distributed throughout the species' historic range by maintaining and restoring ecologically diverse, sustainable, and contiguous sagebrush ecological systems and by implementing scientifically sound management practices; and 2) have locally functional, well-informed groups to actively contribute to sage grouse conservation while balancing habitat, bird, and economic considerations (Conservation Planning Team 2001).

Relative to the Ely District, sage grouse currently occur north of Pioche in Lincoln, Nye, and White Pine counties. In White Pine County, short-term data from 22 leks indicate an overall downward trend of 8 percent in 2003 following decreases of 26 percent in 2002 and 8 percent in 2001 (Nevada Department of Wildlife 2003). Survey data from 12 leks counted in 2002 and 2003 in Lincoln County reflect a 5 percent increase in overall attendance over the short term. Although long-term data still are being analyzed, short-term data indicate that breeding populations of sage grouse in the Lincoln County area are stable (Nevada Department of Wildlife 2003), but are of very low densities. Many of the historic leks within the Lincoln County area are no longer active, as a result of population declines from reductions in overall habitat quality and fragmented seasonal habitats (see Map 3.5-4).

Current Management

Management of special status species depends on their listing status. Federally listed species are regulated by the U.S. Fish and Wildlife Service and managed by BLM under the Endangered Species Act. The BLM must follow the requirements of the Endangered Species Act to protect the listed species and their habitat. The BLM also manages their lands to protect U.S. Fish and Wildlife Service candidate species, Nevada BLM sensitive species, and state listed species as described in BLM Manual 6840. Other management guidance for special status species includes the implementation of recovery plans, biological opinions, plan amendments, and interagency recovery implementation teams. Those recovery plans for terrestrial wildlife species that are applicable to the Ely District are the Desert Tortoise Recovery Plan (1994) and the Southwestern Willow Flycatcher Recovery Plan (2003).

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All special status species are being managed to prevent future listing under the Endangered Species Act. Several ACEC nominations for special status species were not carried forward because existing management was deemed adequate to protect the species.

As part of Nevada's conservation strategy, two conservation plans (one for White Pine County and one for Lincoln County) were developed by the local sage grouse planning teams. The goal of these county conservation plans is to develop and implement local monitoring strategies to promote sage grouse conservation.

3.8 Wild Horses

3.8.1 Existing Conditions

Current wild horse herds originated from animals released into native habitats since the early white exploration and settlement in the region in the 1800s (see Section 3.9, Cultural Resources). The current populations incorporate genetic material and traits from a wide variety of breeds used historically within the region. Some of the wild horses in the District have descended from mining stock and tend to have a draft appearance; others are derived from ranch stock or cavalry remount ancestry. Size and conformation usually are correlated with that ancestry. The most predominant colors are sorrels and bays, but other colors and patterns also are represented.

Herd structure consists of a lead mare, a dominant stallion, and other mares and foals. From a distance, the lead mare frequently can be recognized by her agitation and vigilance. When a perceived threat materializes, she will take the herd away to a safer location. The stud, or stallion, spends much of his time segregating the herd from bachelor studs, which form small bands on the periphery of the main band. Occasionally, one of these studs will challenge the lead stallion for dominance.



Although some predation (primarily by mountain lions) is known to occur, mortality due to predation is relatively limited in most herds because of the preponderance of open spaces and expanses in the District. Large predators require cover for stealth and stalking efficiency.

Wild horses compete with livestock and wildlife for available forage. There are both differences and similarities in dietary overlaps and food preferences (Hubbard and Hansen 1976). Managers, biologists, and interested public traditionally have perceived that free-roaming horses are ecologically equivalent to domestic cattle. Both species are regarded as equivalent in calculating animal unit months and having the same influence on structure, function, and composition of semi-arid ecological systems. Beever (2003) stated that it may be inappropriate to assume that influences of horses mirror influences of cattle or other ungulates. The author states that free-roaming horses have an evolutionary history that has given rise to a unique suite of behavioral, morphological, and physiological traits. Horses have a larger body size than cattle and physiologically are less efficient digesters of grass and other forage, therefore, requiring greater quantities of forage. Horses are one of the least selective grazers in western North America. Fewer plant species may remain ungrazed in areas occupied by wild horses compared to areas occupied by cattle and other ungulates. Because of this non-selectivity and use of a lower quality diet, horses must consume 20 to

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65 percent more forage than cattle per unit of body weight. In addition, horses physically are able to remove vegetation closer to the ground, sometimes with adverse effects.

3.8.2 Trends

After passage of the Wild Free-Roaming Horse and Burro Act (Public Law 92-195) in 1971, a comprehensive inventory was conducted on the Ely District. Approximately 700 wild horses were found on 29 areas; these were designated as herd areas. The wild horse population on the Ely District is approximately 2,000 horses. Some herds currently exceed the level that can be supported on a long-term basis by the available forage and water. Herd recruitment numbers greatly exceed the numbers being adopted or being placed into the process for eventual adoption.

Since 1973, when the horse and burro adoption program began, the two legal means of disposing of surplus, harvested animals has been through public adoptions and euthanasia. Some animals, especially older studs, lack the physical appeal and disposition that attract adopters. Ultimately, when these animals are perceived as unadoptable, they are returned to holding facilities or released back onto public lands. Euthanasia is no longer used for population control and is not likely to be resumed. Population trends continue to move upward because annual reproduction and recruitment considerably outnumber adoptions. Population reductions are limited by the fact that herd recruitment exceeds the legal methods and mechanisms for disposal. With present high numbers on the range, the potential for negative impacts is extremely high.

In the fall of 2004, Congress amended the 1971 Act to facilitate the sale of animals over 10 years of age and those that had been offered unsuccessfully for adoption at least three times. It is too soon to judge the effectiveness of the amendment relative to control of herd populations.

In response to herd population problems, the BLM has attempted in some areas to slow natural reproduction by inoculating mares with an immunocontraceptive called porcine zona pellucida. Research continues for the development and testing of an effective multi-year vaccine that potentially could lower herd recruitment rates to a more desirable level.

3.8.3 Current Management

Perhaps no other federal program receives a higher level of public interest and scrutiny than the wild horse program. The health, nutrition, and general well being of wild horse herds are closely monitored by multiple public organizations for a variety of purposes and reasons. These groups present unique opportunities for cooperative and collaborative partnerships as well as for controversy. Such groups in Nevada have provided monitoring assistance, publicity for the program via training demonstrations and wild horse and burro shows, development and maintenance of wild horse projects, orphan foal adoptions, volunteers to assist in compliance checks, and the offer of pasture for surplus or unadoptable animals.

Following passage of the Wild Free-Roaming Horse and Burro Act of 1971 (Public Law 92-195), 29 herd areas within what is now the Ely District were identified as having wild horse populations. Some of these

were combined for management purposes, resulting in 25 herd management areas, one of which was later dropped under provisions of the Desert Tortoise Amendment. The remaining 24 herd management areas encompass approximately 5.36 million acres of BLM-administered lands in the Ely District, or approximately 45 percent of the entire District (Table 3.8-1). The smallest of the herd management areas is 19,500 acres; the largest is nearly 800,000 acres. There are no wild horse ranges designated within the Ely District. The current established appropriate management level District-wide is 2,141 animals.

Table 3.8-1
Herd Management Areas Under the Jurisdiction of the Ely Field Office

Herd Management Areas	Size (acres)	Appropriate Management Level Range
Antelope	389,900	324
Applewhite	30,300	1
Blue Nose Peak	84,600	1
Buck and Bald	799,500	423
Butte	427,800	95
Cherry Creek	35,000	0-0
Clover Creek	33,100	1-14
Clover Mountains	168,000	1-16
Deer Lodge Canyon	105,300	30-50
Delamar Mountains	183,600	51-85
Diamond Hills South	19,500	22
Dry Lake	487,800	94
Highland Peak	136,100	20-33
Jakes Wash	153,700	1-21
Little Mountain	53,000	9-15
Meadow Valley Mountains	94,500	0
Miller Flat	89,400	9-15
Monte Christo	369,800	236
Moriah	53,300	1-29
Rattlesnake	71,400	1
Sand Springs East	476,100	257
Seaman	358,800	159
White River	116,300	90
Wilson Creek	624,500	160
Totals	5,361,300	1,986-2,141

The BLM State Director (Nevada) has approved standards and guidelines for wild horses and burros developed by both the Mojave/Southern Great Basin Resource Advisory Council and the Northeastern Great Basin Resource Advisory Council (see Appendix A). The advisory groups intend that these standards and guidelines will result in a balance of multiple use and sustainable development. Standards for rangeland health only can be reached and maintained by managing animal numbers so that appropriate management levels are not exceeded in each herd management area. Controlling wild horse numbers by gathers and other controls is essential. The Resource Advisory Councils realize that achieving proper functioning rangelands may be a long-term process on degraded rangelands.

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The Ely Field Office has established appropriate management levels for these herd management areas through a series of actions over the past 15 years. In the most recent of these actions, the Ely Field Office issued an Environmental Assessment (NV-04-03-036) and Finding of No Significant Impact in November 2003 for Establishment of Appropriate Management Levels for Twelve Wild Horse Herd Management Areas. **Table 3.8-2** summarizes the evaluation of habitat suitability for each of the herd management areas in the District and the recommendations for future management. In several cases, management changes are proposed to better allow for management of wild horse populations. These changes are discussed in greater detail in Section 2.5.8.

Maintenance of wild horse numbers is completed through gather operations. Typically the timing of gather operations tends to be sporadic. Some herd management areas are gathered every other year due to drought, while others are gathered every 5 or 6 years due to funding. The determination of an excess population of wild horses occurs primarily based on visual counts or helicopter census (inventory). Coupled with vegetation monitoring, the establishment of the appropriate management level and inventory data will trigger the request for a gather. Due to the majority of foals being born during the spring, gather operations don't occur from March-June.

The maintenance of wild horses within appropriate management levels strives to achieve a thriving natural ecological balance while maintaining a multiple use relationship, as well as achieving rangeland health standards. During wild horse maintenance or gathers, data are collected regarding herd health and characteristics. These data include genetic blood tests, collection of phenotypic characteristics, body condition, age, recruitment rates, and other herd-specific information. During field monitoring, public notification, or gather operations, sick and lame horses are euthanized for humane purposes.

Table 3.8-2
Current Conditions of Herd Management Areas in the Ely District

Herd Management Area	Evaluation of Habitat Suitability						Comments/ Recommendation
	Forage	Water	Space	Cover	Genetic Viability		
Antelope	Adequate	Adequate	Adequate	Adequate	Adequate		Retain
Applewhite	Inadequate with excessive damage to riparian vegetation.	Adequate	Adequate	1	Allotment fencing prevents interaction with other herds and limits genetic viability of the herd.		Remove herd; drop HMA status.
Blue Nose Peak	Forage unsuitable for yearlong grazing.	Inadequate	1	1	No established herd present; HMA receives incidental use.		Drop HMA status
Buck and Bald	Adequate	Adequate	Adequate	Adequate	Adequate		Combine with Butte and Cherry Creek.
Butte	Adequate	Adequate	Adequate	Adequate	Adequate		Combine with Buck and Bald and Cherry Creek.
Cherry Creek	Adequate	Adequate	Adequate	Adequate	No established herd present.		Combine with Buck and Bald and Butte
Clover Creek	Marginal	Adequate	1	1	Inadequate habitat resources to sustain a genetically viable population of 50 breeding animals.		Remove herd; drop HMA status.
Clover Mountains	Inadequate	Adequate	Marginal	1	Inadequate habitat resources to sustain a genetically viable population of 50 breeding animals.		Remove herd; drop HMA status.
Deer Lodge Canyon	1	1	1	Poor winter habitat; horses move to Wilson Creek HMA and other areas to winter.	1		Combine with Wilson Creek.

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Table 3.8-2 (Continued)

Herd Management Area	Evaluation of Habitat Suitability					Comments/ Recommendation
	Forage	Water	Space	Cover	Genetic Viability	
Delamar Mountains	Adequate; heavy to severe use is occurring near water sources and riparian areas.	Adequate	Adequate	Adequate	1	Remove herd; drop HMA status.
Diamond Hills South	Adequate	Adequate	Adequate	Adequate	Adequate	Retain; this is part of a metapopulation with Elko and Battle Mountain districts.
Dry Lake	Adequate	Adequate	Adequate	Adequate	Adequate	Combine with Rattlesnake and Highland Peak.
Highland Peak)	1	Water available, primarily in northern part of HMA.	1	Inadequate winter habitat; horses in the northern portion of HMA winter in the Dry Lake HMA.	1	Combine with Dry Lake and Rattlesnake.
Jakes Wash	Inadequate	Inadequate	Inadequate summer range	Inadequate winter cover		Remove herd; drop HMA status.
Little Mountain	1	Inadequate	Inadequate	Inadequate summer habitat; horses move between this HMA and Miller Flat	1	Remove herd; drop HMA status.
Meadow Valley Mountains	1	Inadequate	Inadequate	Marginal	1	Wild horse use conflicts with desert tortoise habitat, remove herd; drop HMA status.
Miller Flat	Inadequate	Inadequate	Inadequate	Inadequate; poor winter habitat; horses move to Little	1	Remove herd; drop HMA status.

Table 3.8-2 (Continued)

Herd Management Area	Evaluation of Habitat Suitability					Comments/Recommendation
	Forage	Water	Space	Cover	Genetic Viability	
Monte Cristo	Adequate	Adequate	Adequate	Mountain HMA in winter.		
Moriah	Adequate	Inadequate	Inadequate	Adequate	Adequate	Combine with Sand Springs East.
				Lacks suitable yearlong habitat; horses move outside the HMA.	1	Remove herd; drop HMA status.
Rattlesnake	1	1	1	Inadequate summer habitat; horses move to Dry Lake HMA for summer habitat.	1	Combine with Dry Lake and Highland Peak.
Sand Springs East	Adequate	Adequate	Adequate	Adequate	Adequate	Combine with Monte Cristo.
Seaman	1	Marginal, very little water on public lands.	Adequate	No summer habitat; cover inadequate.	1	Remove herd; drop HMA status.
White River	1	Marginal; very little water on public lands.	Adequate	Adequate	1	Remove herd; drop HMA status.
Wilson Creek	Adequate	Adequate	Adequate	Adequate	Adequate	Combine with Deer Lodge Canyon.

¹An "Inadequate" rating in one or more of the five essential habitat suitability components was considered to render the Herd Management Area unsuitable. In several such cases, full evaluation of other components was either not conducted or not considered essential to the management decision.

Data sources: Herd Management Area Descriptions and Appropriate Management Level Evaluation; Appendix B of Twelve HMA Appropriate Management Level EA, EA NV-040-03-036, November 2003; Notice of Wild Horse Management Decision and Finding of No Significant Impact (FONSI) for the Establishment of Appropriate Management Levels for Twelve Wild Horse Herd Management Areas, EA NV-040-03-036, November 2003; unpublished BLM data.

3.9 Cultural Resources

3.9.1 Existing Conditions

The Ely District encompasses a diverse array of climatic, geological, geomorphological, biological, and hydrological settings. The dynamic nature of these settings undoubtedly influenced past land uses and patterns as evidenced by the varied locations of cultural resources found in the District. Landscapes and their associated landforms also influenced past cultural land use in the District. Near-flat and gently sloping surfaces such as alluvial fans, fan piedmonts, fan skirts, alluvial flats, and playas, as well as ridge tops, passes, and stream terraces, contain most cultural resources. These types of landforms convey potential ease of travel, possible water sources, likely prehistoric camping locations, and historic ranch, field, and mining locations (Peterson 1981). Mountain slopes contain the fewest cultural resources, with isolates, quarries, and mining-related endeavors being the primary resource types in these locations.

Approximately 12,114 cultural resource sites have been identified within the Ely District covering a timespan of over 10,000 years. The sites range from small temporary campsites, hunting stations, rock art sites, artifact scatters, quarries, rockshelters, and food collecting sites, to historic mining camps, staging stations, trails, and structures. These prehistoric and historic sites represent continuous use of the area and include several substantial finds. **Table 3.9-1** shows the relative frequency of sites by watershed, or hydrologic unit, and gross time period. **Map 3.9-1** shows the distribution of recorded prehistoric and historic sites in the District.

Approximately 3.8 percent of the District has been surveyed at the Class III inventory level. For the District as a whole, the ratio of prehistoric to historic sites is approximately 7:1 (approximately 43.4 percent of the sites are prehistoric and 8.5 percent are historic sites). Watershed-specific ratios of prehistoric to historic sites range from a high of approximately 16:1 (Long-Ruby Valleys) to a low of approximately 2:1 (Hamlin-Snake Valleys), indicating that prehistoric sites are more common than historic sites throughout the District. More detailed information on methodology, site density, and site distribution are documented in the Gnomon, Inc. Technical Report (Gnomon 2004).

Chronologically, occupational periods within the Great Basin are defined by a series of adaptive strategies that express regional trends over the larger area. These strategies are further refined within the context of regional phases, each of which are represented by different assemblages and settlement patterns within the archaeological record. Adaptive strategies are broadly framed within a Pre-archaic (11000 Before Present to 8000 Before Present) to Late Archaic (1500 Before Present to Historic contact) continuum.

Prehistoric Overview

Pre-archaic sites usually are associated with pluvial lake, shoreline features, riparian areas, marshes, or along old river terraces. Sites usually lack buried components, middens, house features, plant processing equipment, storage facilities, or other indications of intensive occupation. Diagnostic tools include a variety of stemmed projectile points (Great Basin Stemmed series) as well as fluted Clovis and unfluted lanceolate

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Table 3.9-1
Cultural Resource Sites by Hydrologic Subbasin in the Ely District

Hydrologic Subbasin Name ¹	Prehistoric	Historic	Multi-component	Isolated Artifact	Isolated Historic	Isolated Prehistoric	No Record ²	Unknown	No Geographic Information System Link to Database ³	Total All Sites	Percent All Sites
Lower Virgin	157	19	9	1	0	43	3	3	7	242	2.0
White River	674	141	63	0	47	160	194	200	130	1,609	13.3
Muddy	180	3	8	0	2	50	3	3	4	253	2.1
Meadow Valley Wash	710	99	27	0	9	106	16	167	11	1,145	9.5
Hamilin-Snake Valleys	140	69	7	1	11	39	48	368	23	706	5.8
Southern Great Salt Lake Desert	11	1	0	0	0	0	3	3	1	19	0.2
Escalante Desert	92	9	9	0	0	14	1	10	0	135	1.1
South Fork Humboldt	84	16	6	0	4	3	13	78	9	213	1.8
Diamond-Monitor Valleys	0	0	1	0	0	0	0	0	3	4	0.0
Little Smoky-Newark Valleys	446	169	87	0	17	105	165	383	25	1,397	11.5
Long-Ruby Valleys	1,135	69	79	0	18	161	173	441	80	2,156	17.8
Spring-Steptoe Valleys	760	326	141	0	76	338	163	208	76	2,088	17.2
Dry Lake Valley	330	43	14	0	33	250	4	0	8	682	5.6
Hot Creek-Railroad Valleys	359	32	8	0	21	289	33	117	130	989	8.2
Sand Spring-Tikaboo Valleys	184	34	20	0	8	116	10	98	6	476	3.9
Total All Sites by Type	5,262	1,030	479	2	246	1,674	829	2,077	513	12,114	

¹Based on 4th level hydrologic unit subdivisions.

²No Record" indicates that no record for that site number exists at the archives.

³No Geographic Information System link to Database" indicates that the site is present on a map, but has not been entered into the site database.

Source: BLM Site Data; Harry Reid Center; Southern Nevada Archive; Nevada State Museum; Northern Nevada Archive.

types (Beck and Jones 1988). The Early Archaic period (7000 to 4000 Before Present) is marked by Large Side-notched projectile points in the north, large concave-based Triple-T and Humboldt Series at Gatecliff, and by Pinto Series points in the South Fork shelters (Thomas 1981, 1983). Due to the generally warmer and drier conditions during the Early Archaic period, populations in the Great Basin seem to shift from lakeshore environments to a wider variety of locales including those near perennial streams, springs, caves, and rock shelters. The Middle Archaic (4000 Before Present to 1500 Before Present) is marked by an increase in the diversity of habitats in which sites are found (Grayson 1993). Hallmarks of this period include Gatecliff Series projectile points at Gatecliff Shelter, although in the north central and northeastern Great Basin, the Humboldt, Pinto, and even Elko Series projectile points are present. Groundstone tools also become a noticeable part of the tool assemblage. During the Late Archaic period the bow and arrow replaced the spear and atlatl, with accompanying smaller and lighter Rose Spring and Eastgate projectile points during the first part of the Late Archaic, while pottery appeared around 1000 Before Present. Late Archaic populations began to use much more elaborate plant processing equipment, a possible reflection of new subsistence strategies that involved exploiting a more diverse resource base and different ecological zones (Frison 1991).

Between 1500 Before Present and 800 Before Present, much of the eastern Great Basin and northern Colorado Plateau supported people whose lifeways differed from those of the people who were there before and after. The "Fremont" people manufactured well-made, thin-walled black-on-grey carbon painted pottery and frequently lived in sizable villages (Grayson 1993). Although the Fremont were a diverse group, they are defined by their similarities. Artifacts found throughout the Fremont region include sandals made with deer leg hides using the dew claws as heels, basketry with a "one rod and bundle" weaving technique, and pottery with unique patterns and tempers. Though a distinct culture, they share the development of corn agriculture and expansion of organized sedentary villages with contemporary farming cultures, such as the Ancestral Puebloan, who lived throughout the southwest in the 11th and 14th centuries. No artifacts dating after 650 Before Present have been determined to be Fremont; the culture seems to disappear from the archaeological record.

Little is known of the actual connections between prehistoric cultures and the languages and cultures of historic peoples. There is some evidence to indicate that the Numic-speaking people (Shoshone, Paiute, Ute) did not spread into the region (Great Basin) until after about 1000 Before Present and that they absorbed or replaced earlier occupants. The record of Great Basin prehistory is known to extend back 10,000 years or more involving variants of a lifeway termed the Western Archaic, which in its earliest stages was characteristic of the entire West from the Columbia Plateau to the Southwest and from the western Plains to California. Within this common ancient tradition somewhat different yet related regional traditions developed over thousands of years in response to environmental and demographic conditions. In the Great Basin the ancient way of life was maintained with relatively fewer changes into historic times. Though there was considerable local variation of settlement and subsistence patterns and many influences from surrounding regions, the prehistoric Great Basin has presented a basic cultural unity through time (Spencer and Jennings 1977:188-190, Aikens 1978:131-133, d'Azevedo 1986:8).

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Historic Overview

The vast interior of the Great Basin remained unknown until the early 1820s when the first parties of trappers, explorers, and immigrants attempted to traverse the region in search of furs and a direct overland route to the Pacific Coast. Early explorers included; Jedediah Smith, Peter Skene Ogden, Kit Carson, and John C. Fremont. After 1845, an increasing number of immigrants began to follow the Humboldt or Overland Trail, across the central Great Basin to California rather than taking either the Oregon or Old Spanish Trails. The first non-Indian settlement was located at Mormon Station (Genoa) in 1849. Most of Nevada became part of the Utah Territory in 1850, became its own territory in 1861, and finally gained statehood in 1863. The discovery of gold at the Comstock Lode in 1859 brought thousands of people to the area, each dreaming of the riches that gold and silver could bring them. The Comstock Lode began to decline in the 1880s and the state population decreased. Discoveries of silver at Tonopah, gold at Goldfield and copper at Ely led to new mining booms which lasted through World War I. In 1931, gambling was legalized and Nevada experienced a new boom which grows with each new decade.

Ethnographic Overview

The Ely District was occupied by the Western Shoshone, which includes the Goshute Shoshone, and the Southern Paiute during the aboriginal period. The Western Shoshone were the main occupants of the District (see map), and occupied all three counties. The Western Shoshone traditional lands "extended from the arid reaches of Death Valley inhabited by the Panimint Shoshone, through the mountainous highlands of central Nevada into northwestern Utah, where it encompassed the area of the Goshute [or Goshute] of Tooele and Skull valleys and Deep Creek and the "Weber Ute" (d'Azevedo 1986:262). The Western Shoshone interacted extensively with the Southern Paiute along the southern Western Shoshone territorial boundary. The traditional lands of the Goshute Shoshone extended from Utah to eastern Nevada in White Pine County. Goshute Shoshone settlements and subsistence activities extended westerly to at least Egan Canyon in White Pine County. In southern Nevada, Southern Paiute territorial boundaries met those of the Western Shoshone in southern Lincoln County.

Aboriginal groups in the Great Basin, including the Western Shoshone, were also designated according to the dominant food resources or salient environmental features of their respective areas. In the Ely District, the Kusiutta (Goshute Shoshone), meaning "desert people or dust something" lived from the Deep Creek area east into Utah; the Pasiatekkaneen, meaning "redtop grass eaters," occupied the Diamond and Pine valley areas; the Yuainankuhteen, meaning "south or warm side" lived west of Duckwater in Little Smoky Valley; the Pa'anaihteen, or "people from up above," occupied Steptoe Valley; the Taintenkateen, meaning "hole" or "cave", was applied to the people in Cave Valley; and the Mahakuhaduka, named after the "eaters of Mentzelia seeds" also lived west of Duckwater in Reese River Valley (Steward 1938) (Woods 2003:17).

Pre-contact Western Shoshone, of which the Goshute Shoshone are a part, and Southern Paiute are described as uniform cultures with only minor local variations, based entirely on hunting and gathering. The Western Shoshone hunted and gathered in family areas based on yearly cyclical migration patterns. The bands lived in widely scattered winter villages consisting of a few families, coming together for communal activities (Steward 1938). Beginning around 1827, contact with trappers and explorers resulted in the

transformation of these bands from hunter/gatherers to sedentary groups living on government reserves or the outskirts of towns established within their ancestral lands (Woods 2003). With the expansion of mining and ranching interest in the 1880s and continuing displacement of the Indians from their traditional subsistence pursuits, many of the Indians formed small settlements on the outskirts of mining camps, railroad towns, and farming communities. Several reservations were established in the early 1900s. While some Indians moved to reservations located some distance from their traditional lands, most remained where they were until reservations (Indian trust lands) were created around their native settlements (Clemmer 1972, 1978). Small groups of Shoshone attached themselves to ranches and towns, subsisting on a meager standard of living, and maintaining a kind of symbiotic relationship with whites. This pattern remains to some extent to the present day, where most Shoshone have wage jobs in local communities or raise cattle in or around their traditional lands.

3.9.2 Trends

In Nevada, on the lands administered by the Ely District, vandalism, theft, visitor impacts, and natural deterioration are diminishing the cultural and scientific values of cultural resources. This degradation is occurring at an increasingly rapid rate as the population increases. Despite numerous federal laws, destruction of prehistoric and historic cultural resources continue, in part, due to a lack of understanding by the public of the true value of the resources and a lack of regular monitoring of many significant locations (<http://www.nv.blm.gov/ely/prehistoric.htm>). There is such a vast area of public land administered by the Ely District, that patrols by law enforcement are not effective in protecting these sites. Educating and informing the public as well as enlisting their help is one way to preserve cultural resources. Helping people to understand that cultural resource values are far greater than their material worth is the first step. Learning the importance of leaving these artifacts, no matter how small, in their original setting for both study and the future enjoyment of others is another major goal.

3.9.3 Current Management

Cultural Resources

The protection of and consideration of impacts on cultural resources is governed by numerous federal and state mandates, which include, but are not limited to, Section 106 of the National Historic Preservation Act of 1966, as amended, the Archaeological and Historic Preservation Act of 1974, Federal Land Policy and Management Act, and the Nevada State Protocol Agreement (Protocol). In accordance with these mandates, impacts to cultural resources are mitigated by first identifying sites that may be affected by land management decisions through field inventory and then by project redesign (i.e., avoidance) or various data recovery techniques. Data recovery may include surface collection, partial or complete excavation, surface mapping, artifact and feature analysis, architectural documentation, archival research, or some combination thereof.

The BLM's cultural resources management program is a comprehensive system for identifying, protecting, planning the appropriate use of, and managing cultural resources on public lands. The program is composed of two important components: protection and utilization. The protection component is concerned

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with safeguarding and maintaining cultural resources for the public. Included are proactive management activities such as inventory, physical protection, stabilization, preservation, and interpretation of cultural resources along with public education. An example of a proactive activity is the "Nevada Heritage Site Steward Program," which allows the public, through volunteer efforts, the opportunity to learn more about the value of preserving cultural resources and assist the BLM in protecting, monitoring, and documenting the resources. The chief objective of the Site Steward Program is to report to the land managers the destruction, vandalism, or other degradation of cultural resources through a regularly scheduled routine of site visits. The protection component also is concerned with support of other activities so that the management and development of public lands can proceed in accordance with legal and other mandatory requirements. The utilization component is concerned with scientific research and collection management.

The following are a few of the significant cultural resource sites currently being managed under the BLM cultural resources management program:

- The White River Narrows Archaeological District. The White River Narrows Archaeological District is composed of approximately 4,000 acres and contains at least 15 petroglyph sites, which offer opportunities for display, and scientific and public understanding of local aboriginal lifestyle through graphic images. A Cultural Resources Management Plan was developed for this site to provide long-term management direction for the protection, enhancement, and utilization of cultural resources within the White River Narrows Archaeological District location.



- The Sunshine Locality National Register District. The Sunshine Locality National Register District is a preserve of more than 90 archaeological sites located within a 35,000-acre area representing an 11,000-year-old Early Archaic lake-and-marsh adapted culture known as the Western Pluvial Lakes Tradition. A long-term Cultural Resources Management Plan was developed for this site in 1987.
- Pony Express National Historic Trail. The Pony Express started on April 3, 1860, and the last trip arrived in San Francisco on November 20, 1861. Thus, the Pony Express lasted 19 months, 2 weeks, and 3 days or 19.5 months. During the month of April 1860, the Pony Express carried important communications in 10 days. The actual averages of the Pony Express for the 19.5 months were April to October, 12 to 13 days, and November to March, 14 to 16 days.

- Baker Archaeological Site. The Baker Archaeological Site has been identified as a "Puebloid" or "Fremont" site and contains at least one Fremont pithouse and possible adobe-walled storage structures, as well as chipped stone, ceramics, and other portable artifact associations. A long-term Cultural Resources Management Plan was developed for this site in 1991.

Traditional Cultural Properties

A Traditional Cultural Property can be defined generally as a place associated with cultural practices or beliefs of a living community that: 1) are rooted in that community's history and 2) are important in maintaining the continuing cultural identity of the community. Places that may be of traditional cultural importance include, but are not limited to, a rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents; locations associated with the traditional beliefs of an American Indian group about its origins, cultural history, or the nature of the world; or locations where American Indian religious practitioners go, either in the past or the present, to perform ceremonial activities based on traditional cultural rules or practice (Parker and King 1989).

Properties that have achieved significance only within the 50 years preceding their evaluation are not eligible for inclusion in the National Register unless "sufficient historical perspective exists to determine that the property is exceptionally important and will continue to retain that distinction in the future." This is an extremely important criteria consideration with respect to traditional cultural values. Significance ascribed to a property only in the past 50 years cannot be considered traditional. The fact that a property may have gone unused for a lengthy period of time, with use beginning again only recently, does not make the property ineligible for the National Register.

A Traditional Cultural Property is eligible for the National Register only if it meets one or more of the National Register criteria (criteria a through d). However, traditional cultural properties are almost always listed under Criterion (a) and occasionally Criterion (b) for their association with historical events or broad patterns of events. Recognizing a place as eligible for the National Register, as a Traditional Cultural Property or as anything else, does not change its significance, it merely requires that the significance and value of a property be systematically considered in planning and in consultation with those who value it.

Within the Ely District, several geographic locations have been identified through consultation with tribal governments; however, none of the geographic locations meet National Register eligibility criteria for Traditional Cultural Properties. These geographic locations may meet other criteria as significant ethnohistoric sites, or they may deserve consideration under the American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, or Executive Order 13007. No Traditional Cultural Properties have been identified, which are recommended eligible, within the District after several recent and extensive efforts made to do so.

Identification of the places of geographic interest in the District was accomplished through the application of several research components, including American Indian contacts, archival research, field reconnaissance, and oral history interviews. Western Shoshone, Goshute Shoshone, and Southern Paiute reservations, colonies, organizations, and individuals were contacted by mail and telephone. Meetings and interviews

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were held with representatives of the Ely Shoshone, Duckwater Shoshone, Yomba Shoshone, and Battle Mountain Shoshone, the Ibapah Goshute in Utah, the Paiute Tribe of Utah, Moapa Band of Paiute, and American Indian individuals residing in Eagle Valley and Caliente, Nevada. A total of 164 places of geographic interest were identified, 119 for Western Shoshone and Goshute Shoshone, and 45 for the Southern Paiute. Of these, 87 were from archival sources, 69 were from interviews with American Indians, and 8 were from both archival and interview sources. Of the 164 properties identified, 11 are situated outside of the District, but were included for context (Woods 2003).

The 164 places of geographic interest (sites) identified from archival research, American Indian contacts, and oral history interviews are varied and many have multiple functions. These site functions include habitation, resource procurement, festival/gatherings, ceremonial/ritual, burial/mortuary, rock art, mythology/stories, historical events/battles, trails, and agricultural/planting (Woods 2003).

Western Shoshone/Goshute Site Descriptions.

Spring Valley: 24 sites (8 habitation sites, 7 habitation/procurement/festival sites, 1 habitation/festival site, 4 habitation/procurement sites, 1 habitation/historical event site, 1 battle site, 1 procurement/festival site, 1 procurement site). Antelope hunts, spring festivals, rabbit drives, and mud hen drives also took place in Spring Valley.

Antelope Valley: 9 sites (3 habitation/procurement sites, 3 habitation sites, 1 procurement site, 1 habitation/burial site, and 1 habitation/agricultural site). Seeds were procured in and around the valley and pine nuts from the foothills and slopes of the Goshute Range. Communal antelope drives took place in the northern foothills of the Kern Mountains. Communal rabbit drives took place west of Ibapah in Deep Creek Valley.

Snake Valley and Snake Range: 17 sites (2 habitation sites, 4 habitation/procurement sites, 1 habitation/procurement/festival site, 1 procurement/festival/rock art site, 1 procurement/festival site, 1 ceremonial site, 1 burial site, 1 rock art site, 3 battle sites). Deer and sheep hunting occurred in the Snake Range, pine nut gathering took place in the foothills of the Snake Range, antelope and rabbit drives took place in Snake Valley, and seed collecting took place at various locations through out the valley. Some crops were grown in Snake Valley.

Steptoe Valley: 13 sites (5 habitation/procurement/festival sites, 2 festival/ceremonial sites, 1 burial/ceremonial site, 1 ceremonial site, 3 mythology sites, 1 battle site). Pine nuts were gathered on both sides of the valley in the foothills and slopes of the Egan and Schell Creek ranges. Rabbit drives were held in various places in the valley. Antelope drives were held at various locations in and near the valley. Deer were hunted individually and communally. Some crops were grown in Steptoe Valley

Cave Valley: 2 sites (1 habitation site, 1 mythological site). Pine nuts were gathered in the Ely Mountains, on Mt. Grafton, and on Quartz Mountain. Pine nuts were also gathered as far south as Willow Creek, northwest of Pioche. The Cave Valley Shoshone conducted their own local rabbit drives, antelope drives and festivals.

Egan Range: 3 sites (1 habitation/ceremonial site, 1 ceremonial/historical event or battle site, and 1 ceremonial site).

Little Smoky Valley (Snowball): 6 sites (1 mythological site, 5 habitation sites). Little Smoky Valley people gathered pine nuts in the Antelope Range (near Hicks Station). *Mentzelia* and *Chenopodium* seeds were gathered at various locations in the valley. People in the northern part of the valley went south to Hot Creek Valley for rabbit and antelope drives. They also participated in antelope and sometimes deer drives near Snowball. Deer and other game were also hunted individually.

Pancake Range: 7 sites (1 procurement site, 4 ceremonial sites, 1 burial site, and 1 mythological site).

Railroad Valley: 23 sites (4 habitation sites, 1 habitation/festival site, 4 habitation/procurement sites, 3 habitation/procurement/burial sites, 4 procurement sites, 2 ceremonial sites, 1 ceremonial/burial site, 3 burial sites, and 1 mythology site). Much of the subsistence and festival activity in central and northern Railroad Valley was centered around a fertile area with ample water from mountain runoff and flowing streams. People came from surrounding areas to gather sunflower and redtop grass seeds. Rabbit drives were held about 15 miles south of the fertile area in the valley flat and near Blue Eagle Spring. People from northern Railroad Valley (Hamilton area) went to the Duckwater area in the fall for rabbit drives and associated festivals. Pine nuts were gathered in the White Pine Mountains or northeast of Currant Creek, possibly near White Pine Peak. The Pancake Mountains west and south of the Duckwater area were known as a good place for pine nut gathering. Western Shoshone hunted in Railroad Valley between the Pancake and Quinn Canyon ranges. In the spring, antelope drives were held in a low pass in the northern end of Railroad Valley. The Duckwater area was the locale for the main festivals in Railroad Valley. Participants came from the Hamilton, Currant Creek, Warm Spring, and sometimes Nyala and Hot Creek areas.

White River Valley: 7 sites (2 burial site, 1 habitation/procurement site, 1 procurement/festival/ceremonial site, 1 festival/ceremonial site, 1 mythological site, 1 battle site).

Jakes Valley: 1 site (1 habitation/procurement/festival site).

Butte Valley: 1 site (1 procurement site).

Huntington Valley: 2 sites (1 procurement site and 1 habitation/battle* site).

Clover Valley: 1 site (1 procurement site).

Ruby Valley: 2 sites (1 habitation/historical event site and 1 habitation/trail site).

Diamond Valley: 1 site (1 habitation/procurement site).

Lake Valley: 1 site (1 habitation/procurement site)

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Sand Springs Valley: 1 site (habitation/battle site)

Southern Paiute Site Descriptions.

The Southern Paiute practiced horticulture to a greater extent than their Shoshone neighbors to the north. Mesquite, screw beans, and other wild seeds were gathered locally and in nearby localities. Pahrump and Ash Meadows were the northwestern limit of aboriginal horticulture. Corn, squash, beans, and sunflowers were grown on plots of land that were reportedly individually owned. Large game hunting occurred in the Spring Mountains and the Shoshone Mountains (deer), and the mountains between the Amargosa River and the Pahrump Valley, and in the Funeral Mountains (mountain sheep). There were few antelope and rabbit drives. Pine nuts, other seeds, and large game were gathered in the surrounding mountains, particularly the Spring Mountains. Unlike the Western Shoshone, pine nut tracts were individually owned, generally by the men and inherited by their sons. Annual fall festivals were held at "major population centers" and attended by Southern Paiute from other areas (Woods 2003).

Panaca area: 8 sites (1 habitation site, 2 procurement sites, 2 rock art sites, 1 battle site, 1 agricultural site, and 1 mythological site).

Indian Peaks area: 1 site (1 habitation site)

Spring Valley (Lincoln County): 1 site (1 habitation site)

Eagle Valley: 3 sites (1 habitation site, 1 habitation/rock art site, 1 rock art site)

Pioche area: 3 sites (1 habitation/ceremonial site, 2 habitation/procurement sites)

Panaca area: 4 sites (1 habitation/procurement site, 1 mythological site, 1 ceremonial site, 1 ceremonial/trail site)

Caliente area: 11 sites (2 habitation sites, 1 habitation/festival site, 1 habitation/burial site, 1 festival site, 2 procurement sites, 1 burial site, 1 rock art/procurement site, 1 rock art/mythological site, and 1 ceremonial/rock art site)

Pahranagat area: 4 sites (2 battle sites, 1 habitation/procurement site, and 1 trail site)

Hiko area: 3 sites (1 habitation site, 1 rock art site, 1 procurement/rock art site)

Crystal Springs area: 3 sites (1 habitation site, 1 rock art site, 1 mythological site)

Ash Springs area: 2 sites (1 habitation/ceremonial site and 1 battle site)

Alamo area: 1 site (1 habitation/procurement/festival site)

Sharp area: 1 site (1 habitation/procurement/festival area)

Delamar Valley: 1 site (1 habitation/procurement/burial/battle site)

No extensive search was made to identify traditional communities other than American Indian; however, no Traditional Cultural Properties have been identified from other communities.

3.10 Paleontology**3.10.1 Existing Conditions**

Paleontological resources on public lands are recognized as constituting a fragile and nonrenewable scientific record of the history of life on earth, and so represent an important and critical component of America's natural heritage. Once damaged, destroyed, or improperly collected, their scientific and educational value may be greatly reduced or lost forever. In addition to their scientific, educational, and recreational values, paleontological resources can be used to inform land managers about interrelationships between the biological and geological components of ecological systems over long periods of time.

A variety of paleontological resources exist in the District, including plant and animal fossils occurring in Cambrian, Mississippian, Devonian, Permian, Triassic, Eocene, Miocene, and Pliocene rocks. There are several areas that have been identified as paleontologically sensitive:

Ruin Wash and Klondyke Gap. Ruin Wash is one of the few places in the world where soft-bodied animal Lower Cambrian fossils are preserved. In addition, specimens from both Ruin Wash and Klondyke Gap are scientifically important because of their completeness and excellent preservation.

Andie's Mine Trilobites. Andie's Mine contains scientifically important paleontological value. The trilobites at this location are part of the Pioche Shale Formation. This shale formation contains several different orders of trilobites.

Snake Creek Indian Burial Cave. Snake Creek is a unique paleontological deposit. The cave is the first natural trap excavated in the Great Basin and one of the few localities describing a valley-bottom community. The recovery of extinct camel and horse, in addition to radiometric dates, indicates at least some of the deposits to be of late Pleistocene age.

The Elderberry Canyon Local Fauna. The Elderberry Canyon Local Fauna is the first Eocene mammalian fauna reported from the Great Basin and occurs in carbonate rocks occurring in the Sheep Pass Formation near Ely. The Elderberry Canyon Local Fauna includes over 40 taxa of vertebrates, more than 30 of which are mammals.

3.10.2 Trends

Vertebrate fossils such as dinosaurs, mammals, fishes, and reptiles, and uncommon invertebrate fossils are collected by trained researchers under BLM permit. Collected vertebrate fossils and uncommon invertebrate fossils remain the property of all citizens of the U.S. and are placed in museums or other public institutions after they are studied.

Common invertebrate fossils such as plants, mollusks, and trilobites are collected for personal use in reasonable quantities, but may not be bartered or sold. Currently, there is no registration system established for invertebrate fossil collecting. In the Ely District, the lack of regular site monitoring and public education

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about fossil collecting has led to illegal commercial collecting of trilobites and individuals collecting far more than is considered "reasonable quantities" of trilobites for personal use, both of which impact paleontological resources (see Section 2.5.10).

The demand for use of both vertebrate and invertebrate fossils has increased over the years and is expected to increase in the future. Casual use and collection of invertebrate fossils by "rockhounds" and fossil collectors has contributed to the loss of the resource and its research potential and interpretation.

3.10.3 Current Management

Paleontological resources are managed on public lands because they are nonrenewable resources of value to scientists, educators, hobbyists, commercial collectors, and other members of the public. Without protection, the resources may be intentionally or unintentionally damaged or destroyed, causing valuable information to be lost. Currently, trained researchers collect and study vertebrate fossils and uncommon invertebrate fossils under BLM permit. These fossils are then placed in a museum or other public institution. No permit is necessary for the collecting of common invertebrate fossils.

The BLM paleontological resource protection program includes: identifying and evaluating paleontological resources so they may be adequately addressed in planning and environmental analysis documents; maintaining and conducting an effective and continuing protection program; increasing the awareness of federal land managers and the public regarding the significance of paleontological resources and management requirements; encouraging public participation in resource management; avoiding or mitigating impacts to valuable paleontological resources; avoiding publicizing the exact locations of scientifically significant paleontological resources; and, managing and issuing collection permits when appropriate (BLM 1998b).

3.11 Visual Resources**3.11.1 Existing Conditions**

Important visual resources are visually sensitive use areas where the maintenance of the surrounding visual environment affects the people's enjoyment of using an area, or are unique or unusual landscapes having natural scenic value. Landscapes in which viewers may travel, recreate, or reside, or where existing views may potentially be affected by the actions defined in the alternatives are included in the definition of visually sensitive areas.

The planning area currently varies from a predominantly undisturbed natural setting with occasional dirt and asphalt roads to the visually dominant, disturbed area of the existing Robinson Mine.

Clear skies with broad, open landscapes characterize the regional landscape setting of the Ely District. The area is characteristic of the mid- to high-elevation areas of the western U.S., with rolling hills and broad valleys. The vegetation has a contrasting pattern of pinyon-juniper forests intermixed with sagebrush and grasses. This type of landscape allows for long viewing distances. Consequently, maintenance of visual resources is a concern from nearby and distant viewing locations, including views from federal lands with high visual resource values, federally designated wilderness areas, recreation areas, major transportation routes, and population centers.

3.11.2 Trends

Sensitivity of the public to visual resources within the District has increased over time. An increase in population growth within and adjacent to the District has lead to concerns over preserving the viewsheds around communities. A desire to preserve viewsheds along historic trails also has been expressed. Additionally, scenery is a draw to tourism and backcountry recreation, which has led to increased concerns over preserving visual resources (see Section 2.5.11).

3.11.3 Current Management

Visual resources currently are managed following existing visual resource management manuals and guidance. Areas within the District without existing Visual Resource Management classes are managed using interim Visual Resource Management objectives where a project is proposed. BLM managers could use discretion in applying standards to various land use proposals and grant exceptions where warranted by the public interest or valid development rights.

The BLM is responsible for ensuring that the scenic values of public lands on the District are considered before allowing surface-disturbing uses that may have negative visual impacts. Visual design considerations are being incorporated into the permit requirements, as applicable, for all surface-disturbing projects. This is accomplished through the use of the Visual Resource Management system, which involves inventorying scenic values and establishing management objectives for those values. Once management objectives are established, proposed surface-disturbing activities are evaluated to determine if they conform with the

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management objectives. Different levels of scenic values require different levels of management. Management of an area with high scenic values may focus on preserving the existing character of the landscape, while management of an area with little scenic value may allow major modifications to the landscape.

Visual Resource Management classes were developed for BLM-administered lands in the Schell and Caliente districts through an inventory process (Map 2.4-4 through 2.4-7). The inventory process consists of a scenic quality evaluation, sensitivity level analysis, and a delineation of distance zones. The area's visual resources then were assigned to management classes with established objectives. Visual resource management in the Egan District is performed on a case-by-case basis.

The Visual Resource Management system provides a way to identify and evaluate scenic values to determine the appropriate levels of management during land use planning. The Visual Resource Management system recognizes the classes identified below. Each management class portrays the relative value of the visual resources and serves as a tool that describes the visual management objectives.

Class I Objective: To preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention. Class I is assigned to those areas where a management decision has been made previously to maintain a natural landscape such as designated scenic areas.

Class II Objective: To retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer.

Class III Objective: To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract the attention but should not dominate the view of the casual observer.

Class IV Objective: To provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high and may dominate the view and be the major focus of viewer attention.

Another key component of establishing Visual Resource Management classes is evaluating visual sensitivity. Visual sensitivity evaluates the amount of use an area receives and the viewers' expressed attitudes toward what is seen. This data is used to delineate areas as having high, moderate, or low concerns for changes in scenic quality and for prevention of visible change in the landscape. Areas identified as sensitive include known travel routes, areas of human habitation, areas of traditional use, and special areas.

Once visual resource classes and objectives are established, the analysis stage is used to determine whether the potential visual impacts from proposed surface-disturbing activities will meet the management objectives established for the area. A visual contrast rating process is used for this analysis, which involves

comparing the project features with the major existing landscape features using the basic design elements of form, line, color, and texture.

3.12 Lands and Realty**3.12.1 Existing Conditions**

Approximately 82 percent of the District is under federal ownership and is administered by the BLM. The BLM administers approximately 4.44 million acres of public land within White Pine County, 1.34 million acres of public land in Nye County, and approximately 5.62 million acres of public land in Lincoln County. Additional land within the District is administered by other agencies including the U.S. Forest Service, Department of Defense, U.S. Fish and Wildlife Service, Bureau of Indian Affairs, National Park Service, and various state agencies. Blocks of private land tend to be concentrated within the valleys and around communities within the District. Land ownership within the District is presented on **Map 3.12-1**.

Airport Leases

There are currently three existing airport leases within the Ely District. The details of these airport leases and the associated acreage is provided on **Table 3.12-1**.

Recreation and Public Purposes

Table 3.12-2 provides the public lands leased or disposed of on the District under the Recreation and Public Purpose Act.

Disposals

The Egan RMP (BLM 1986), the Schell Management Framework Plan (MFP) (BLM 1981), the Caliente MFP, and the Desert Tortoise Amendment to Caliente MFP (BLM 2000b) identified a total of 88,354 acres of public land remaining for disposal (37,297 acres from the Egan RMP; 35,558 acres from the Schell MFP; 12,073 acres from the Caliente MFP; and 3,426 acres from the Desert Tortoise Amendment to the Caliente MFP. **Table 3.12-3** provides the locations of the remaining lands available for disposal.

Acquisitions

Acquisitions of non-federal lands within the District have been limited to three easements for a cattleguard, a fence, and a spring development with enclosure.

Withdrawals

The District contains five existing withdrawals and two pending withdrawals subsequent to the existing land use plans. These withdrawals are presented in **Table 3.12-4** and include the administering agency, acreage, and purpose.

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Table 3.12-1
Existing Airport Leases

Purpose	Acreage
White Pine County Airport located north of Ely	598
Alamo Airport located west of Alamo	633
The Long Now Foundation landing strip located in Spring Valley east of Ely	120
Total Acreage	1,351

Table 3.12-2
Summary of Existing Recreation and Public Purpose Act Patents and Leases from 1981 to Present

Purpose	Acreage
Existing Leases	
Charcoal Ovens State Park	520
Pleasant Valley School Lease	40
Lund School Lease	40
Total Acreage	600
Existing Patents	
Pioche School	10
White Pine County School District	40
Lincoln County Fairgrounds	60
White Pine County Shooting Range	580
Nevada Division of State Land, Horse and Cattle Honor Camp	15
Nevada Division of State Land, Nevada State Prison	1,059
White Pine County Commissioners, Baker Cemetery	3
Nevada Department of Wildlife, Key Pittman Wildlife Management Area Expansion	5
University of Nevada, Reno, Great Basin College	60
Lincoln County Solid Waste Disposal Site	80
Nevada Department of Transportation, Panaca Maintenance Station	17
Total Acreage	1,929

Table 3.12-3
Remaining Lands Identified for Disposal in Previous Land Use Plans
Subject to the Federal Lands Transaction Facilitation Act (Baca Bill)

Legal Description		Acres
T.16 N., R.63 E., Section 1, Lots 5-20, S½SE¼, S½NE¼		240
9, Lots 9, 10, 15,		108.34
12, E½,		320
13, E½SE¼, NW¼SW¼, SW¼NW¼,		160
16, Lots 1-5,		175.60
23, SE¼, E½SW¼,		240
24, W½SW¼, E½NE¼,		160
25, W½,		320
26, All		640
27, E½SE¼NE¼, E½SE¼		100
34, E½,		320
35, S½NW¼, NW¼NW¼, NE¼,		280
36, W½SE¼, SW¼, NW¼, SW¼NE¼,		440
T.17 N., R.63 E., Section 15, SE¼SE¼, NE¼NW¼, NW¼NE¼,		120
16, SE¼NE¼,		40
21, SE¼,		160
22, E½E½,		160
34, Lots 1-4, W½E½SW¼NW¼,		245.28
W½SW¼NW¼, N½NW¼NW¼,		
E½NW¼, NE¼NW¼,		
T.15N., R.64 E., Section 6 E½W½,		152.74
T.17N., R.64 E., Section 5 SE¼,		160
7 E½SW¼,		80
8 Lots 1-8, NW¼SW¼, SE¼SW¼.		416.26
T.20N., R.64E., Section 28 All,		640
29 All,		640
32 SE¼, E½NE¼,		240
33 All,		640
T.21N., R.64E., Section 5 All,		641.2
6 All,		635.79
T.22N., R.64E., Section 29 All,		640
30 All,		632.9
31 All,		634.4
32 All,		640
T.1N., R. 67E., Section 9 W½SW¼SW¼,		20
T.14N., R.71E, Section 30 Lots 3, 5, 6, SE¼NW¼SE¼NW¼,		24.58
N½NW¼SE¼NW¼,		
T.4N., R.69E., Section 3 SW¼, (within)		14.9
10 S½NE¼, (within)		9.5
T.2S., R.67E. Section 14 NW¼SE¼, NE¼NE¼SW¼,		70
23 NE¼NE¼,		40
24 N½NW¼SW¼,		20
TOTAL ACRES		11,141.49

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Table 3.12-4
Existing, Pending, and Proposed Withdrawals Within the District

Administering Agency	Description	Purpose	Acreage
Existing Withdrawals			
BLM	Sacramento Pass Recreation Area	Withdrawn from surface entry and mining, but not from leasing under the mineral leasing laws.	465
BLM	Pony Springs Fire Station	Withdrawn from all forms of appropriation under the public land laws, including the mining laws, but not from leasing under the mineral leasing laws.	10
BLM	Gap Mountain Recreation Site	Withdrawn from settlement, sale, location, or entry under the general land laws including the mining laws, but not from leasing under the mineral leasing laws.	105
U.S. Fish and Wildlife Service	Desert National Wildlife Refuge	Withdrawn from all forms of appropriation under the public land laws, including the mining laws, but not from leasing under the mineral leasing laws.	3,270
National Park Service	Baker Administration Site	Withdrawn from all forms of appropriation under the public land laws, including the mining laws, but not from leasing under the mineral leasing laws.	80
Total			3,930
Pending Withdrawals			
BLM	Ash Springs Recreation Area	Withdraw from all forms of appropriation under the public land laws, including the mining laws, but not from leasing under the mineral leasing laws.	73
U.S. Fish and Wildlife Service	Ruby Marshes inholding acquisition	Withdraw from all forms of appropriation under the public land laws, including the mining laws, but not from leasing under the mineral leasing laws.	640
Total			713
Proposed Withdrawals			
BLM	Entrance area from Baker to Great Basin National Park		4,541
BLM	Murry Springs Watershed Protection		2,450
BLM	BLM (Caliente) Administrative Site		3
Total			6,994

Rights-of-Way

There are 13,141 rights-of-way on the District. The majority of these rights-of-way grants have been issued for powerlines and roads. Other rights-of-way on the District include fiber optic lines, state highway material sites, U.S. highways, interstate highways, water pipelines, irrigation ditches, etc.

There are four major right-of-way corridors on the District: the Moapa corridor, the Falcon to Gonder corridor, and the Southwest Intertie Project corridor, and an additional corridor designated as part of the Caliente MFP and Desert Tortoise Amendment (see **Map 3.12-2**). The Moapa Corridor is a 0.5-mile-wide

corridor connecting a designated corridor on the Moapa Reservation and running northeast to the Nevada-Utah state line. The Falcon to Gonder corridor is a 165- to 185-mile-long 345-kilovolt electric transmission line connecting the Falcon substation north of Dunphy, Nevada, with the Gonder substation north of Ely, Nevada. Although no specific width had been established in previous land use planning efforts, the existing right-of-way is currently 160 feet wide. Approximately 38.9 miles of this corridor are within the Ely District. The Southwest Intertie Project corridor is a 0.5-mile-wide corridor. It begins in the Ely District at the White Pine and Elko County line on U.S. Highway 93 and follows U.S. Highway 93 south to the Lincoln-Clark County line. The Ely to Delta portion of the Southwest Intertie Project corridor begins at the Robinson Summit substation and continues east in an existing corridor to a new substation near Delta, Utah.

Additionally, a corridor designated as part of the Caliente MFP and Desert Tortoise Amendment is present on the District. This corridor is 1,000 feet wide, 500 feet on centerline of an existing fiber optic line beginning in Township 11 South, Range 71 East, Section 30, running easterly to the Arizona stateline. This corridor crosses portions of the Beaver Dam Slope ACEC.

Communication Sites

The BLM is responsible for permitting communication sites located on BLM-administered public lands on the District. Communication sites typically consist of systems used for transmission or reception of radio, television, telephone, telegraph, and other electronic signals, as well as other means of communication. Facilities found on communication sites usually include a building, a tower, and other related authorized incidental improvements. Communication sites permitted on the District consist of two-way mobile radio sites, microwave towers, television translators, cellular telephone towers, wireless internet sites, and military aircraft tracking systems.



There are 36 communication sites on the District. These sites are listed in **Table 3.12-5** and shown on **Map 3.12-3**.

Unauthorized Occupancy, Use, and Development

Unauthorized occupancy, use, and development has not been a high-priority issue on the District. Unauthorized occupancy typically consists of encroachments of buildings, yards, or fencelines, which have been in place for a number of years. These encroachments generally are discovered during survey projects.

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The majority of trespasses have been agricultural. Additional unauthorized uses include residential/occupancy, and developments including fencelines, buildings, roads, and water wells. Resolution of unauthorized use is on a case-by-case basis and usually includes the issuance of temporary land use permits, lease or right-of-way issuance, disposal of the encroached land through sale, or the removal of the unauthorized use.

Table 3.12-5
Communication Sites on the Ely District

Land Use Plan	Site Name
Schell MFP	Worthington Peak
	Seaman Range
	Golden Gate
	Mount Irish
	Connors Pass
	Domingo
	Kern Mountain
	Spring Valley
	Sacramento Pass
	Stateline
	Mount Wilson33
Egan RMP	Cherry Creek
	Duck Creek
	Squaw Peak
	Kimberly Peak
	Saxton Peak
	Currant
	Duckwater
	Big Bald Mountain (Pending)
Caliente MFP	Cherry Creek (Fortymile Knoll) (Pending)
	Highland Peak
	Caliente
	Chokecherry
	Ella Mountain
	Black Mountain
	Delamar Mountain
	Leith Peak
	Mormon Mesa
	Kane Springs
	Alamo East
	Red Flag West #1
	Pahranagat Valley Television District East
	Gap Peak
	Alamo West
	Pahranagat Valley Television District West
	East Remote
	West Remote
	Burnt Springs (Pending)
	Tempaiute (Pending)

Land Use Authorizations

Land use permits are used to authorize uses of public lands that do not exceed 3 years and involve little or no land improvement, construction, or investment. This land use authorization does not convey ownership of the land and may be renewed or revoked at the discretion of the BLM. Land use authorizations include film permits, advertising displays, commercial or non-commercial croplands, apiaries, livestock holding or feeding areas not related to grazing permits and leases, harvesting of native or introduced species, temporary or permanent facilities for commercial purposes (does not include mining claims), residential occupancy, ski resorts, construction equipment storage sites, assembly yards, oil rig stacking sites, mining claim occupancy if the residential structures are not incidental to the mining operation, and water pipelines and well pumps related to irrigation and non-irrigation facilities. Land use authorizations may be either permits, which are less than 3 years or leases, which can be for longer than 3 years and can involve a substantial investment in the land. Currently, there is one land use lease for occupancy and one land use lease for agricultural.

3.12.2 Trends

Changes in ownership and administration of BLM public lands are largely dictated by external public and agency demands in the form of applications for rights-of-way for a variety of infrastructure uses by private interests, land disposals for public uses, and congressional and executive branch acts that authorize federal land sales and withdrawals. In turn, these external demands are driven by regional and national economic development initiatives. While not comprehensive, the following are three major influences on existing and future administration of public lands in the Ely District:

- **Expansion of Las Vegas and Mesquite.** The increases in the population of Las Vegas and Mesquite have resulted in increased demand for water and energy supplies, as well as increased use of public lands within driving distance of these urban and residential centers. To meet future water requirements, it is anticipated that Las Vegas utilities will seek underground water supplies on public lands. New water pipelines and electrical transmission lines, requiring new rights-of-way, will be needed to pump and convey water to the city. There will likely be an expanded demand for developed and dispersed recreation opportunities to meet the demands of a larger population. These demands may be met through additional land disposals, and improvements in campgrounds and other public facilities.
- **Energy, telecommunications, and transportation infrastructure expansions.** The Ely District is crossed by large interstate natural gas pipelines, electrical transmission lines, and fiber optic telecommunication lines (see discussion of utility corridors). As demand for energy increases on the west coast of the U.S., it is likely that more pipeline and electrical generation transmission projects will be proposed to meet future demands. These facilities will likely require rights-of-way for generation sites, and new rights of way for linear project components. It also is likely that state highway and county road improvements will be made to improve access between rural communities and the Las Vegas metropolitan area. An example is a proposed new highway segment between Caliente in Lincoln County and Mesquite in Clark County.

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- Minerals and oil and gas development. As discussed in Section 3.18, Geology and Mineral Resources, the Ely District has historically been an important source of minerals and energy resources. While the current levels of mineral and oil and gas activity are relatively low, constraints on world supplies of minerals and energy may make the known and potential new reserves economically viable for development in the near future. New or renewed mineral development would create new needs for roads, and electrical power.
- Renewable Energy. See Section 3.13.2.

3.12.3 Current Management

While the overall direction for management of public lands is contained in existing land use plans and the statutory requirements of the Federal Land Policy and Management Act of 1976, there are several federal legislative acts and executive orders that may be implemented to change land ownership and status within the Ely District. The different types of land transfers and federal administrative actions are discussed below.

- Airport Patents. As part of the Airport and Airway Improvement Act of 1982, the BLM can convey lands under their jurisdiction to public agencies for use as airports and airways.
- Act of June 14, 1926, commonly known as the Recreation and Public Purposes Act. The Recreation and Public Purposes Act (43 Code of Federal Regulations 2912 and 2740) provides for the lease or conveyance, respectively, of public land to states or their political subdivisions, and to nonprofit corporations and associations, for recreational and public purposes. Public purpose is defined as providing facilities or services for the benefit of the public in connection with, but not limited to, public health, safety, or welfare.

The use of public lands or facilities under the Recreation and Public Purpose Act for habitation, cultivation, trade, or manufacturing is permissible only when necessary, integral, and an essential part of the public purpose.

- Disposals. Public land on the District may be disposed of under a variety of authorities. Disposals administered by the BLM include Recreation and Public Purpose Act disposals, Desert Land Entry disposals, disposals under the Carey Act, Airport Conveyance disposals, Indian Allotment disposals, and sales under the Federal Land Policy and Management Act.
- Airport Leases. Airport leases are authorized as part of the Act of May 24, 1928. There are currently three existing airport leases within the Ely District. The details of these leases and the associated acreage are provided in **Table 3.12-1**.

- Withdrawals. Withdrawals are formal actions that accomplish one or more of the following actions:

- Transfers total or partial jurisdiction of federal land between federal agencies.
- Segregates federal land to some or all of the public land laws and mineral laws.
- Dedicates land for a specific public purpose.

Withdrawals consist of three major categories: 1) Congressional Withdrawals, 2) Administrative Withdrawals, and 3) Federal Energy Regulation Commission Withdrawals.

1. Congressional Withdrawals. These are legislative withdrawals designated by Congress in the form of public laws.
 2. Administrative Withdrawals. These are withdrawals made by the President, Secretary of the Interior, or other authorized officers of the executive branch of the Federal Government.
 3. Federal Energy Regulation Commission Withdrawals. These are withdrawals for power projects established under the authority of Section 24 of the Federal Power Act of 1920. These withdrawals are automatically created upon filing an application for power development until otherwise directed by the Federal Energy Regulation Commission or by Congress.
- Rights-of-way. A right-of-way grant is an authorization to use a specific piece of public land for specific facilities for a defined period of time. The majority of rights-of-way granted by the BLM are authorized under one of the following: 1) Title V of the Federal Land Policy and Management Act (43 U.S. Code 1761-1771); 2) the Mineral Leasing Act (Section 28 of the Mineral Leasing Act of 1920, as amended, 43 U.S. Code 185); and 3) other laws/authorities not repealed by the Federal Land Policy and Management Act. Under the Federal Land Policy and Management Act, the BLM can issue rights-of-way grants for electrical power generation, transmission and distribution systems, communication systems, highways, railroads, pipelines (other than oil and gas pipelines), and other facilities or systems, which are in the public interest. Additionally, rights-of-way grants can be issued for renewable energy projects such as wind energy developments, biomass utilization, and solar energy projects. Detailed discussions on renewable energy on the District are presented in Section 3.13. Under the Mineral Leasing Act, the BLM can issue rights-of-way grants for oil and natural gas gathering, distribution pipelines and related facilities, and oil and natural gas transmission pipelines and related facilities.
 - Acquisitions. In managing the 264 million acres of public lands under its jurisdiction, the BLM provides for acquisition, use, disposal, and adjustment of land resources; determines the boundaries of federal land; and, maintains historic records for these ownership transactions.

Acquisition, through exchange, purchase, and donation is an important component of the BLM's land management strategy. The BLM acquires land and easements in land, when it is in the public interest and consistent with approved land use plans. The BLM's land acquisition program is designed to:

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- Improve management of natural resources through consolidation of federal, state, and private lands.
- Increase recreational opportunities and preserve open space.
- Secure key property necessary to protect endangered species and promote biological diversity.
- Preserve archaeological and historical resources.
- Implement specific acquisitions authorized by Acts of Congress.

– Exchange

Public lands may be exchanged by the BLM for lands owned by corporations, individuals, states or local governments. Exchanges are only pursued with willing landowners. The lands to be exchanged must be of equal value and located within the same state. Through exchanges, non-federal parties can acquire lands with commercial, industrial, residential, or agricultural development or economic potential. In turn, the federal government acquires lands offering public recreation, open space, wildlife, and resource values.

– Purchase

The purchase of lands or interests in lands, such as easements and water rights, can be accomplished within a few months if funding is available, and if there are no title defects, hazardous materials, or other mitigating local issues.

– Easements for Conservation, Access Roads, Trails, and Improvements

Easements allow the government to control certain rights on private property that usually involve access or development. The lands remain in private ownership with limited rights owned by the government.

– Donation

These lands are generally accepted as a gift to the U.S. if the lands are contiguous to and "block-up" existing public lands and the need for public ownership is identified in land use plans.

3.13 Renewable Energy**3.13.1 Existing Conditions**

As a directive under the National Energy Policy report (May 2001), the BLM is required to assess the potential for renewable energy on public lands and to identify any limitations to access these resources. By incorporating this information during the land use planning process, an accelerated process for future renewable energy applications would be provided and the amount of environmental review needed for individual applications would potentially be reduced by addressing environmental issues in the land use plans. Additionally, the Nevada State renewable portfolio law (Nevada Senate Bill 372) requires utilities to buy no less than 15 percent of their power from renewable energy sources by 2013.

The BLM and the Department of Energy National Renewable Energy Laboratory have established a partnership to assess renewable energy resources on public lands in the western U.S. Through this assessment, BLM planning units were evaluated for renewable resource development potential and reported in assessing the potential for renewable energy on public lands (BLM 2003a). The renewable resources evaluated in the Ely District include biomass utilization, solar, and wind energy.

Biomass Utilization

Biomass utilization is the use of woody by-products from activities such as ecological restoration and fuels reduction. These by-products can be utilized through harvest, sale, trade, wood product production, and bio-energy (BLM 2003b). Bio-energy utilization is the use of the woody material generated through restoration or treatment activities to generate power in specialized power plants. As restoration and fuels reduction projects continue, the biomass material generated represents a long-term source of renewable energy.

Biomass technology is currently being used in the Ely District for heating one of the White Pine County schools. Retrofitting other schools in White Pine County is being considered.

Solar Energy

Solar energy is the conversion of sunlight into electrical power through the use of specialized solar panels. This technology uses solar light to provide heat, light, hot water, and electricity for homes, businesses, and industry. There are a variety of solar energy technologies including photovoltaic (solar cell) systems, concentrating solar systems, passive solar heating and daylighting, solar hot water, and solar process heat and space cooling.

Currently, solar energy power is being used for project-specific locations such as communication sites and spring boxes in the Ely District. There have not been applications submitted for proposed projects in the District.

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Wind Energy

Wind energy is the conversion of wind currents into electrical or mechanical power through the use of turbines. Wind energy is considered the world's fastest growing energy source (BLM 2003c). A major benefit of wind energy is that wind is a free, renewable resource.

Currently, wind energy developments are not present in the District. However, development of wind energy projects would be conducted in accordance with the BLM Interim Wind Energy Development Policy Instruction Memorandum 2003-020 (BLM 2003d).

3.13.2 Trends

From 2000 to the end of 2002, wind energy capacity in the U.S. has risen from 53 megawatts to 4,660 megawatts. No existing wind energy developments are present in the Ely District. However, since 2000, four anemometer permits have been authorized and eight permits for anemometer testing are currently pending. There are seven project sites identified with anemometers in the District. As the BLM reduces limitations to renewable resource development and utility companies strive to be in compliance with the Nevada renewable portfolio law, it is anticipated that applications for renewable energy projects would increase.

Concentrating solar power technologies currently offer the lowest-cost solar electricity for large-scale power generation (10-megawatt-electric and above). Current technologies cost around \$3 per watt or 12¢ per kilowatt-hour of solar power. New innovative hybrid systems that combine large concentrating solar power plants with conventional natural gas combined cycle or coal plants can reduce costs to \$1.5 per watt and drive the cost of solar power to below 8¢ per kilowatt-hour. Advancements in the technology and the use of low-cost thermal storage will allow future concentrating solar power plants to operate for more hours during the day and shift solar power generation to evening hours. Future advances are expected to allow solar power to be generated for 4¢ to 5¢ per kilowatt-hour in the next few decades.

Researchers are developing lower cost solar concentrators, high-efficiency engine/generators, and high-performance receivers. The goal is to further develop the technology to increase acceptance of the systems and help the systems penetrate growing domestic and international energy markets.

The southwestern U.S. can benefit from the use of these systems. Because the Southwest gets up to twice as much sunlight as the rest of the country, many southwestern states (California, Nevada, Arizona, and New Mexico) are exploring the use of concentrating solar power, especially for use in public utilities.

The Department of Energy analysts predict the opening of specialized niche markets in this country for the solar power industry between 2005 and 2010. The Department of Energy estimates that by 2005, there will be as much as 500 megawatts of concentrating solar power capacity installed worldwide. By 2020, more than 20 gigawatts of concentrating solar power systems could be installed throughout the world.

3.13.3 Current Management

Currently, applications for renewable energy testing, specifically anemometer sites, are handled on a case-by-case basis by the BLM-administered lands and realty program. Although no proposals for development of renewable resources have been received to date, management of these projects would be performed on a case-by-case basis using an interdisciplinary approach. Additionally, in anticipation of increasing renewable energy development in the western U.S., the BLM is in the process of preparing a Programmatic EIS to evaluate issues associated with wind energy development on western public lands, excluding Alaska (BLM 2003c).

3.14 Travel Management and Off-highway Vehicle Use

3.14.1 Roads

Existing Conditions

The majority of access on the District is accomplished informally. However, reasonable access is made for permitted uses such as mining claims, mining uses, mineral leases, grazing, recreation, rights-of-way, and other specific uses.

The BLM maintains 2,264 miles of roads on the District per year. Within the District, the counties maintain a total of 2,313 miles of roads per year. The BLM and counties cooperatively maintain an additional 77 miles of roads.

Trends

One of the most important trends observed for travel management in the District has been an increase in informal travel route proliferation. This increase mainly is due to recreation use, and can be correlated to increases in population and off-highway vehicle use. In Nevada, there has been a 184 percent increase in off-highway vehicle use between 1998 and 2003.

Current Management

Road system management by the BLM on the District is variable. Priorities for road maintenance are determined on a case-by-case basis and are dependent on a variety of factors including budget, emergency situations, access, weather, and whether or not the road leads to facilities. Roads on the District are maintained according to the following maintenance levels described in the BLM Facility Inventory Maintenance Management System:

- Level 1 – Roads where minimal maintenance is required. These roads are no longer needed and therefore closed to traffic. The objective is to remove these roads from the transportation system. Maintenance consists of maintaining drainage and runoff patterns only. Grading, brushing, or slide removal is not performed unless drainage is affected, causing erosion.
- Level 2 – Roads that are open for limited administrative traffic only. These roads are typically passable by high-clearance vehicles. Maintenance consists of maintaining drainage structures. Grading is only conducted to correct drainage issues and brushing is conducted to allow administrative access. Slides may be left in place if they do not adversely affect drainage.
- Level 3 – Roads where management objectives require the road to be opened seasonally or year-round for commercial, recreation, or high-volume administrative access. These roads are natural or aggregate-surfaced and have a defined cross-section with drainage structures. Maintenance consists of

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maintaining drainage structures, performing grading, and brushing. Slides affecting drainage have a high priority for removal.

- Level 4 – Roads where management objectives required the road to be open year-round and to connect major features, such as recreation sites, local road systems, or administrative sites, to county, state, or federal roads. The entire roadway is maintained, and a preventative maintenance program may be established as needed. Problems are repaired as discovered. These roads may be closed or have limited access due to snow conditions.
- Level 5 – Roads where management objectives require the road to be open all year. These roads are the highest traffic volume roads in the transportation system. The entire roadway is maintained and a preventative maintenance program is established. Problems are repaired as discovered. These roads may be closed or have limited access due to snow conditions.

New roads may be constructed by the BLM or by a permittee in connection with a project occurring on public land such as a mineral lease or right-of-way. Over the past 20 years, approximately 520 authorized roads, totaling 650 miles, have been constructed in the District.

3.14.2 Off-highway Vehicles

Existing Conditions

Off-highway vehicle use on the District typically is associated with recreation, hunting and fishing, and livestock and range management. Off-highway vehicle access to public land varies across the District. Public land on the District is currently designated as open for vehicle use, limited to designated roads, or closed to use. In an open area, all types of vehicle use are permitted and are not restricted. In a limited area, vehicle use is restricted to certain times, to certain areas, to designated routes, to existing routes, or to specified vehicle uses. In a closed area, motorized vehicle use is restricted at all times.

Trends

Off-highway vehicle use has rapidly increased on the District. Off-highway vehicle use is not only limited to recreational use, but also has become a preferred mode of transportation for other activities such as hunting, fishing, camping, ranching, mining, and wood cutting. Based on this trend, off-highway vehicle use is increasing across the entire District. A large amount of critical desert tortoise habitat and dust abatement regulations in Clark County have limited opportunities for off-highway vehicle use in the Las Vegas District, which has displaced off-highway vehicle users to the Ely District. Another off-highway vehicle trend on the Ely District has been an increase of intensive off-highway vehicle use around communities.

Off-highway vehicle race events occur on the District as well. These events currently are limited to courses for which a NEPA analysis has been completed. Recreation locations with high off-highway vehicle use on the District include Duck Creek Basin, Chief Mountain, and other destination locations with developed facilities.

Current Management

Off-highway vehicle activities in the Ely District are managed under the National Management Strategy for Motorized Off-highway Vehicle Use on Public Lands (BLM 2001a). This guidance is an effort to manage off-highway vehicle activities in compliance with applicable executive orders (11644 [1972] and 11989 [1978]) and regulations (43 Code of Federal Regulations 8340). Off-highway vehicle race events on the District are managed under Special Recreation Permits. Special Recreation Permits are discussed in Section 3.15, Recreation.

3.15 Recreation

3.15.1 Existing Conditions

During 2004, there were an estimated 271,000 visitor days to public land on the District. Recreational activities on the District typically consist of casual and dispersed uses including off-highway vehicle use, hunting, fishing, camping, cross-country skiing, horseback riding, caving, geocaching, rock climbing, mountain biking, and cultural tourism (BLM 2003e). Currently, there are no fee-use areas on the District. There are currently 24 outfitter and guide permits issued within the District.



3.15.2 Trends

The number of recreation visits to the Ely District has been increasing. These increases in recreation can be attributed to population growth within the District and nearby Las Vegas (a city of 1.5 million people and growing) and a reduction in the availability of primitive recreational experiences similar to those found on the Ely District. Another trend that has been observed is an increase of extreme activities. Activities such as rock climbing, bouldering, mountain biking, and caving have increased in popularity throughout the western U.S., and are increasing on the Ely District as well. Off-highway vehicle use, which also is a major recreational activity, is discussed in Section 3.14, Travel Management and Off-highway Vehicle Use.

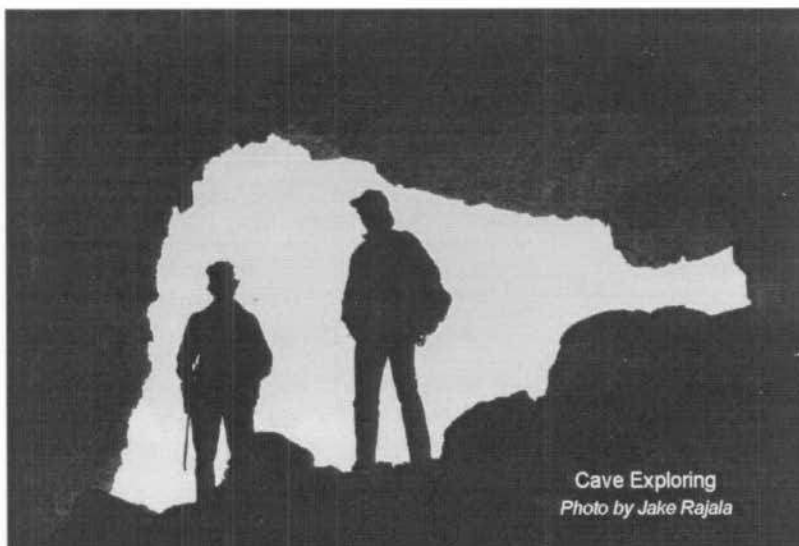
3.15.3 Current Management

Recreation on the District is managed through the designation of special recreation management areas and extensive recreation management areas. A special recreation management area is an area where more intensive recreation management is needed, where a commitment has been made by the BLM to provide specific recreation activity and experience opportunities, and where recreation is a principal management objective. An extensive recreation management area includes all BLM-administered lands outside the special recreation management areas, and may include developed and primitive recreation sites with minimal facilities. The Loneliest Highway Special Recreation Management Area is located along U.S. Highway 50 on the District. This special recreation management area contains some of the most popular destinations on the District including Illipah Reservoir, Cold Creek Reservoir, Garnet Hill Rockhounding Area, and the Pony Express Trail. The management objectives of the special recreation management area are to provide recreational opportunities to the public that would otherwise not be available, reduce conflict among users, minimize damage to resources, and reduce visitor health and safety issues. The remainder of the District is broken into three extensive recreation management areas: the Schell Extensive Recreation Management Area (4.24 million acres), Egan Extensive Recreation Management Area (3.82 million acres), and Caliente Extensive Recreation Management Area (3.5 million acres). Recreational use within these

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extensive recreation management areas typically include hunting, fishing, camping, sightseeing, wildlife viewing, as well as numerous other recreational opportunities. Management actions within extensive recreation management areas primarily are limited to providing basic information and access to the public. Visitors to extensive recreation management areas are expected to rely on their own skill, knowledge, and equipment when participating in recreational activities.

The role of the BLM is to provide a wide spectrum of recreational opportunities, while maintaining the character of the land through minimizing development. The majority of recreation sites on the District are used as both specific destinations and as staging areas for dispersed recreation. Recreation sites on the District are classified as developed, primitive, or dispersed. Developed recreation sites are sites that provide facilities such as picnic tables, pit toilets, and informational signs and are easily accessible.



Primitive recreation sites are indicated on maps but do not have developed facilities. Dispersed recreation sites usually have informal fire rings, and camp areas. Dispersed recreation sites do not have any developed facilities. These sites are not indicated on maps and usually are used as an access point for other forms of recreation such as hunting or fishing. Access to dispersed recreation sites can vary from easy to difficult. There are eleven developed and five primitive recreation sites on the District. The eleven developed recreation sites are presented in **Table 3.15-1**. The locations of existing recreation sites on the District are shown on **Map 3.15-1**.

Table 3.15-1
Developed Recreation Sites on the Ely District

Recreation Site Name
Meadow Valley
Baker Site
Sacramento Pass
Illipah Reservoir
Cleve Creek
Garnet Hill
Goshute Creek
Ash Springs
Egan Crest Trail
Ward North Trailhead
Ely Elk Viewing Area

The BLM manages competitive recreational events, recreation-related commercial enterprises, and other organized events on the District through the use of Special Recreation Permits. Special Recreation Permits provide a framework to analyze proposed recreation-related activities, control the number of users and limit resource conflict, and provide a tool to monitor and mitigate impacts to resources from organized event activities. Special Recreation Permits are required for five types of uses: commercial use, competitive use, vending, special area use, and organized group activity and event use. In issuing Special Use Permits to recreational users of public lands, the BLM authorizes permittees use of the lands and related waters for permitted purposes. Special Use Permits are managed in a manner consistent with management objectives determined for the area. The majority of Special Use Permits issued on the District are typically for outfitting and guiding activities and for off-highway vehicle events.

3.16 Livestock Grazing

Prior to 1934, grazing of public lands outside forest perimeters was managed by the General Land Office. Comprehensive management of these lands was initiated in 1934 when Congress passed the Taylor Grazing Act. The Grazing Service was established and charged with implementation of the Act. Specific tasks included establishment of a permit system, organization of grazing districts, fee assessment, and consultation with local advisory boards. The Ely Grazing District (No. 4) was established November 3, 1936. In 1946, the Grazing Service was combined with the General Land Office to create the BLM.

In the late 1960s and early 1970s, a shift in public attitude regarding the use of public land emerged. Congress passed the NEPA in 1969, directing land managers to address the environmental consequences of activities on federal lands. As a result of the NEPA and the Natural Resources Defense Council v. BLM decision in 1973, EISs were prepared for every resource area administered by the BLM. The purpose of these EISs was to address the status of grazing and to develop a solution to meet long term goals of grazing on public land.

In 1976, Congress passed the Federal Land Policy Management Act. This act requires that public domain lands be managed for multiple use. It also reaffirmed BLM's authority to reduce livestock numbers if necessary. Perhaps most importantly, it provided for the preparation of Allotment Management Plans in consultation, coordination, and cooperation with permittees for each grazing permit. The Public Rangeland Improvement Act, passed by Congress in 1978, established a grazing fee formula that sets and adjusts annual fees for grazing on public domain land.

In 1986, a national management approach was initiated with the goal of monitoring the long term and short term effects of grazing. The objective of monitoring was to provide a long term database that would allow for the identification of specific problem areas, and the definition of management actions necessary to correct those problems. The method implemented was an "allotment evaluation" process with a 3- to 5-year data compilation interval. In 1984, a Nevada Range Studies Task Group developed and released the Nevada Rangeland Monitoring Handbook to serve as a technical guide in the monitoring process.

In August of 1995, new regulations were enacted that changed methods and administrative procedures used by the BLM in its management of public lands. Commonly referred to as Range Reform '94, these regulations directed the establishment of standards and guidelines to "achieve properly functioning ecological systems for both upland and riparian areas." In addition, these regulations changed how the BLM manages and permits grazing allotments. Grazing standards and guidelines for the Mojave-Southern Great Basin and Northeastern Great Basin regions were adopted and approved by the Secretary of the Interior on February 12, 1997.

The Adjudication Period (Early to Mid 1960s)

The "adjudication" of BLM grazing permits occurred over a period of approximately 15 years, from the mid 1950s through the late 1960s. The Ely District had largely completed this process by the mid 1960s.

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Adjudication consisted of establishing the extent of historical grazing on allotments and included a review of the following factors:

1. **Priority Use.** The Ely District had a "priority period" of 1929-1934, the 5-year period immediately preceding enactment of the Taylor Grazing Act. All priority period use claims were subject to validation and constituted a primary permit preference limitation.
2. **Base Property Production.** All BLM Districts imposed a minimum base property requirement, predicated either on land or water. Assets such as privately owned base property, hay fields, hay stacks, pastures, water rights, and water flows were measured, and production was calculated. If the existing grazing allocation exceeded the maximum allowable base property production ratio, the grazing permit was subject to reduction.
3. **Public Land Carrying Capacity.** During the adjudication period, a one-point-in-time carrying capacity survey was conducted of all grazing allotments. After meeting the first two tests, if the existing grazing allocations exceeded the surveyed carrying capacity, the grazing permit was subject to reduction.

The collective effect of applying these three limiting factors determined the amount of "adjudicated grazing privileges." Adjudicated permits also were referred to as "Base Property Qualifications" that were subject to change and refinement as further site specific information became available.

The Post Adjudication Period (Mid-1960s to 1980)

There is no clear point in time when the "Adjudication Period" ended, but for the purposes of this RMP, the period between 1965 and 1979 is defined as the "Post Adjudication Period." This coincides with the completion of adjudication in the Ely District in 1965 and the beginning of the "Evaluation Period" in 1980.

The post-adjudication period saw the formal implementation of "grazing management" by the BLM. Grazing management systems were developed and incorporated into allotment management plans. As allotment management plans were implemented, a second round of grazing permit adjustments generally occurred. This management phase was well underway by the mid-1960s in the Ely District. It progressed at an accelerated rate until the mid-1970s when the Natural Resources Defense Council lawsuit required a shift in management toward the development of EISs.

Most animal unit month reductions during this period were based on results of BLM Soil-Vegetation Inventory Method surveys reported in the earliest grazing EISs. Protests from professional range management specialists caused the Soil-Vegetation Inventory Method process to be reevaluated (RCI 1981), and it was demonstrated that one-point-in-time surveys could not be used to calculate rangeland carrying capacity in an accurate and consistent manner. BLM issued a decision discontinuing these surveys and began a program based on utilization and vegetation trend monitoring. Resultant data are used to evaluate whether or not grazing practices have been successful at meeting objectives established in resource management plans, rangeland program summaries, and allotment management plans.

The Evaluation Period (1980 to Present)

In 1986, the BLM Washington office issued Instructional Memorandum 706 (WO IM 86-706). This memorandum instructed that monitoring evaluations be conducted of all "I" and "M" management category allotments¹. Allotment evaluations have been completed on 102 allotments since 1990. Each allotment evaluation has resulted in either grazing agreements, issuance of grazing decisions, or documentation to the allotment file concerning grazing management. In 1989, the Nevada State BLM Office issued Instructional Memorandum 268 (IM NV-89-268). This memorandum focused on compliance with Washington Office Instructional Memorandum 86-706 and other existing laws and regulations pertinent to this change in policy. Instructional Memorandum NV 89-268 (Revised) specifies how each district shall conduct the evaluation process. Since these directives were issued, there has been a new prioritization of goals. Priorities changed to include allotments containing wild horse herd management areas. This allows for the resolution of resource conflicts between wild horses and livestock, and to the establishment of appropriate management levels for wild horses. Currently assessments and evaluations are conducted at the watershed and allotment scale to determine if the standards and fundamentals for rangeland health are being achieved.

As monitoring results became available, allotment evaluations were completed. This process is the process used to determine if existing multiple uses for allotments are meeting or making progress towards meeting land use plan objectives, allotment specific objectives, Rangeland Program Summary objectives, and land use plan decisions, in addition to the standards and guidelines for grazing administration. Each allotment evaluation concluded with specific management recommendations. Management changes were implemented in the following years, either through agreement or decision. The most frequent management actions occurring as a result of these evaluations include reduction in preference and other changes in grazing management such as implementation of a grazing system, or change in season of use.

3.16.1 Existing Conditions

All livestock grazing allotments within the Ely District are classified as perennial allotments. Term permits authorize grazing use based on perennial vegetation. Livestock grazing allotments within the northern portion of the District are within the Great Basin ecological system. Livestock grazing allotments within the southern portion of the District, primarily the southern portion of Lincoln County, are within the Mojave Desert ecological system.

The Mojave Desert is made up of ecological systems of limited distribution and size that support unique sensitive/endemic species or communities, and of ecological systems that have low resiliency to environmental stress or disturbance. The area represents the majority of creosote vegetation within the Mojave Desert ecological system.

¹BLM initiated a selective management process to prioritize expenditures of limited range management funds. Allotments were grouped into categories according to their resource potential, current management status, and complexity of resource issues. Allotments classified as "I" were to be managed to Improve current condition; allotments classified as "M" were to be managed to Maintain satisfactory conditions; allotments classified as "C" were to be managed Custodially while protecting existing resource values.

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Grazing preference is attached to base property owned or controlled by a permittee or lessee. Base property within the Ely District includes both land and water. The majority of base properties within the Ely District are land base properties. Land base or water base were designated as per the Special Rule affecting the Ely District. The Special Rule for classification of base properties, in Nevada Grazing District No. 4, was approved February 21, 1945. This Special Rule states in pertinent part: "A proper factual showing of its necessity having been made by the regional grazer and it having been found that local conditions in Nevada Grazing District No. 4 make necessary the application of a special rule for the classification of base properties in order to better achieve an administration consistent with the purposes of the act, either land or water only, or a combination of land and water, may be classified as base property for a single livestock operation in that district. In instances in which a combination of land and water is so recognized, the following further classification will be made: Class 1. Land dependent by use and full-time prior water. Class 2. Land dependent by location and full-time water." Land base properties within the Ely District range from less than one hundred to several thousand acres. Water base property is privately owned water that is suitable and available for consumption by livestock.

In contrast, the Caliente portion of the Ely District is subject to procedures applicable to Nevada Grazing District Number 5 rather than the Ely Special Rule. Thus, grazing allotments in the old Caliente Resource Area can be either land or water based but not both.

Following recent sale of land parcels under the Lincoln County Land Act, there are 239 grazing allotments within the Ely District. The Ely District administers livestock grazing on 226 allotments. Livestock grazing is administered on 143 allotments by the Ely Field Office and on 83 allotments by the Caliente Field Station. Of the 226 allotments, there are 87 allotments designated as Custodial, 61 designated as Improve, and 78 designated as Maintain¹. Eight allotments are administered by other districts within Nevada while one allotment is administered by the St. George Field Office (see Appendix R). Three allotments are completely closed as a result of the 2000 Caliente MFP Amendment for Management of Desert Tortoise Habitat. They are the Beacon, Sand Hollow, and Rox-Tule Allotments. Portions of six allotments were partially closed as a result of the 2000 Caliente MFP Amendment for Management of Desert Tortoise Habitat. They are the Breedlove, Delamar, Gourd Springs, Mormon Peak, Grapevine and Lower Lake East Allotments. Grazing use was relinquished on the Rocky Hills Allotment. Six allotments adjudicated as trail allotments are included in the 226 allotments administered by the Ely District.

There are currently 139 livestock permittees that hold term permits authorizing livestock grazing on the public lands within the Ely District (69 permittees with the Ely Field Office and 70 permittees with the Caliente Field Station). There are currently 129 cattle operators and 10 sheep operators in the Ely District. All livestock grazing is authorized under Section 3 permits of the "Taylor Grazing Act."

Total animal unit months for the District are 726,165. Total active use is 535,487 animal unit months and total suspended use is 190,678 animal unit months. The majority of the livestock grazing authorized is for cattle grazing of which the total number of active animal unit months is 398,055. Total active use is 137,005 animal unit months for sheep and 427 animal unit months for domestic horses. Authorized grazing use including both cattle and sheep for the period 1998 to 2002 ranged from 206,707 animal unit months to 271,354 animal unit months. Essential grazing allotment information is maintained in the BLM Rangeland Administration System Database. Relevant information for the allotments on the Ely District is presented on

Table R-1 in Appendix R. Over recent years, particularly since 1996, stocking levels have been reduced due to the impacts of drought. Actual use also fluctuates based on economic conditions. On most allotments in recent years, BLM has approved permittee applications, or has required permittees, to use less forage than the active use authorized by their term permits. In limited situations in those years when forage for livestock remains following use of the forage authorized by the term grazing permit, BLM has authorized use on a temporary and nonrenewable basis. Temporary nonrenewable is authorized provided it is consistent with multiple use objectives and multiple uses of the allotment.

The majority of the public land cattle operations within the Ely District run between 100 to 500 head of livestock. Some of the larger operations run up to 1,000 head. The typical sheep operation ranges in size up to approximately 4,000 sheep.

Grazing allotments within the Ely District range in size from approximately 300 acres to 1,000,000 acres with the average of approximately 269,723 acres in size. The larger cattle and sheep operators graze on several allotments while many of the smaller operations include only one allotment. Some of the larger livestock grazing operations include 10 to 15 allotments. Actual animal unit months for the larger operators ranges from approximately 14,000 to 30,000 animal unit months annually. Currently there are 9 operators that graze a total of 87 allotments with a total cumulative active use of 204,225 (38 percent) of the total active animal unit months (535,487) for the Ely District.

Allotment grazing periods of use within the Ely District vary and include both seasonal or yearlong. Seasons include fall/winter/spring period and spring/summer/fall period. Grazing systems may include rest-rotation, deferred rotation, and deferred rest-rotation. A few allotments also graze under the principles of Holistic Resource Management (see Appendix R for grazing system descriptions). Allotments that are grazed seasonally include herding of cattle and sheep between public land allotments, base property, other leased or private pasture and U.S. Forest Service-administered lands.

Most of the allotment categorized as yearlong grazing are associated with the larger year-round operators that graze on several allotments. In these cases, individual allotments typically are grazed seasonally and livestock are moved between pastures, allotments, base property or other pasture based on the season or period of use developed for the grazing system. Allotments have specific periods of use and livestock are moved from one allotment to another based on the periods of use. The majority of the sheep operations include grazing use on several allotments.

Yearlong grazing use does occur on single allotments. Allotments are divided into separate use pastures. Livestock are moved between use areas, base property, or other private pasture based on seasonal use. Livestock are moved or rotated from one use area or pasture of the allotment to another. Areas of grazing use may also be deferred or rested from one year to the next depending on the grazing schedule for the allotment. Livestock distribution is controlled by various methods including water locations, herding, and fencing.

3.0 AFFECTED ENVIRONMENT

Some allotments are grazed in common by two or more livestock permittees. Livestock are either mixed together in the same use area or graze in separate use areas of the allotment. Authorized grazing use is in accordance with established use periods or seasons of use for the allotment.

Most cattle grazing operations maintain a base herd yearlong. Livestock are moved from base property to the allotment(s) during the year depending on the authorized period of use for the allotment. Grazing use on public lands is rotated with base property or other pasture which provides forage during certain seasons. This allows for flexibility in movement of livestock to and from public lands during the year. For some operations, grazing use is rotated with grazing use on the U.S. Forest Service-administered lands and includes seasonal and yearlong operations with single or multiple allotments. Grazing on U.S. Forest Service-administered lands occurs during the summer months. Cattle are moved to U.S. Forest Service-administered lands in early summer and return to public lands during the fall. Seasonal grazing use also includes grazing use on BLM-administered grazing allotments. Livestock are moved from other grazing allotments or pasture lands. Cattle are moved to and from spring, summer, fall and winter pastures. If livestock are not moved to other allotments they are moved to base property or other private pasture. During the period March through May cattle and sheep are moved from winter use areas or base property to the spring use areas or allotments. Most calving occurs during this period on either base property or the allotment. During the early summer period (May and June) cattle are moved to the higher elevation summer pastures. For some operations this includes authorized use on U.S. Forest Service-administered lands or BLM-administered lands. During the fall period, typically September to mid November, cattle are moved to the lower elevation allotments and graze for the fall/winter period. Where operations include several pastures or allotments, livestock movement is based on the established grazing system; (i.e., rest-rotation, deferred rotation and deferred rest-rotation).

Most of the cattle ranches within the Ely District are cow/calf operations. That is, the rancher has a base herd of cattle, the majority of which are cows (bulls are also included in the herd). The primary purpose of the range cow is to produce a calf. Calving usually occurs during the period March through May. Calves are usually weaned during the fall months. Cattle are either trailed or trucked when moving to or from public land allotments.

The majority of the sheep ranches within the Ely District operate almost entirely on BLM-administered lands. Some operations include BLM- and U.S. Forest Service-administered lands. Private lands are used mostly for shipping and handling animals. In the typical public land sheep operation, sheep are trailed to and from seasonal ranges.

Spring is often the most critical and busy time of year for the sheep rancher. In early April the sheep are trailed or trucked to low elevation sagebrush/grasslands which provide early spring forage and topographically protected areas for the ewes to give birth. Although some operations have privately owned spring range, usually they are on public lands. Sheep are sheared prior to lambing, providing the wool product portion of income. Because lambs are fragile, death loss due to weather and/or predators is a major concern and herds are watched closely.

Sheep operators will usually move their sheep to spring ranges in early May. Both types of operations will move their sheep to summer ranges at higher elevations in late June or early July. The sheep are usually

divided into groups or herds of roughly 1,000 ewes and their lambs for easier control and management at this time of year.

The sheep are moved to lower elevation ranges in late September to escape early frost and snow, and the lambs and ewes are selected from the herd for marketing. Lambs and ewes are sold directly off the private or, more typically, the public range at this time of year. It is during this late fall time period that the condition of the herd is evaluated, replacement ewes are selected, and the basic breeding herd is established for another year. The breeding ewes, the replacement lambs, and the few lambs to be sold later are then moved onto lower elevation fall ranges on public lands or to open fields on private land. The herd will remain there until they are moved onto public winter ranges around the first of November. The operating herd now contains the ewes and replacement lambs from two and sometimes three summer bands, comprising an efficient winter band of around 2,500 head.

The breeding season begins in late November or early December and lasts about 2 months. Except during this period, the rams are kept separately from the ewes on private ranges. During winter months, sheep graze on federal land desert shrub ranges (winter ranges). Activities during the winter months center around trucking or trailing sheep to winter ranges, and herding and trailing the sheep herds while on the winter range.

3.16.2 Trends

Range Condition

Over recent years particularly since 1996, stocking levels have been reduced due primarily to the impacts of drought. Active use also has fluctuated based on economic conditions. Authorized grazing use including both cattle and sheep for the period 1998 to 2004 ranged from 271,354 animal unit months to 160,025 animal unit months. Total active use is 535,487 animal unit months. Total licensed grazing use for the 10-year period from 1992 to 2004 is shown in **Table 3.16-1**.

3.16.3 Current Management

Allotment evaluations associated primarily with grazing term permit renewal and the watershed analysis process are being completed. Allotment evaluations and watershed analyses are being conducted to determine if the standards and fundamentals for rangeland health are being achieved. A determination is also made to determine if livestock grazing is maintaining or progressing toward the achievement of standards for rangeland health and if livestock grazing is a significant factor in failing to achieve the standards.

All grazing permits will be fully processed by the end of FY 2009 using the information from the land health standards evaluations. Standards and guidelines developed for the Ely District include the Northeastern Great Basin Area and the Mojave-Southern Great Basin Area. Standards and guidelines will be implemented through terms and conditions of grazing permits, leases, and annual authorizations.

3.0 AFFECTED ENVIRONMENT

Table 3.16-1
Licensed Grazing Use in the Ely District from 1992 to 2004

Year	Licensed Animal Unit Months
1992	194,823
1993	168,620
1994	165,649
1995	153,513
1996	122,204 ¹
1997	173,152
1998	271,354 ²
1999	256,895
2000	258,496
2001	262,332
2002	206,707 ¹
2003	173,662
2004	160,025

¹Severe drought in 1996 and similar conditions since 2002 caused a decline in licensed use.

²In 1998, the Caliente Field Office was transferred from the jurisdiction of the Las Vegas Field Office to the Ely Field Office accounting for the additional 98,000 animal unit months.

The implementation process for standards and guidelines will occur under two separate processes as described below:

1. Rangeland Health Standards assessments will continue at the watershed and allotment scale to determine if the standards and fundamentals for rangeland health are being achieved. Implementation of the standards for grazing administration will be in accordance with the BLM Manual Section 4180, its accompanying Rangeland Health Standards Handbook H-4180-1 and Title 43 Code of Federal Regulations Subpart 4180. Allotment specific objectives may have to be developed, amended or quantified and terms and conditions of permits changed or revised to reflect the standards and guidelines. Watershed analyses and the allotment evaluations associated with these will continue to be completed based on district priorities.
2. During the supervision and/or monitoring of an allotment, if it is determined that the existing terms and conditions of a grazing permit are not in conformance with the approved standards and guidelines and that livestock grazing is determined to be a significant factor in the nonattainment of a standard, grazing management practices or the levels of the grazing use will be changed or terms and conditions of the permit/lease will be modified. These changes or modifications will be in accordance with established procedures to ensure that the grazing management practices or the levels of the grazing use are in conformance with the standards and guidelines.

The allotment evaluation will consist of or involve:

1. The evaluation of current grazing use by all users (livestock, wild horses, wildlife) based on monitoring data analysis and interpretation;

2. Recommendations to change or adjust grazing systems;
3. Recommendations to change or adjust stocking levels;
4. Any recommendations for wildlife populations or habitat management actions required if it is determined that these actions are necessary; and
5. Construction of rangeland projects such as fences, pipelines and water developments.

Management activities on the District also include construction and maintenance of various improvement projects in cooperation with grazing permittees and other agencies. Rangeland projects generally fall into one of two categories: 1) structural projects, such as fences, gates, cattleguards, pipelines, and water developments; and 2) rangeland seedings following fire, brush control, insect infestations, or other disturbances. The former are used to expedite rangeland management by:

- Separating discrete grazing units or allotments;
- Dividing allotments into pastures that facilitate grazing systems;
- Ensuring proper grazing distribution and utilization;
- Accommodating populations of wildlife;
- Providing potable water to all units that livestock have access to; and
- Allowing ready access to all operators and legitimate users.

Range projects or improvements conducted for livestock grazing management and related purposes are shown in **Table 3.16-2**. While only a portion of these improvements have been completed with the specific objective of benefiting livestock, most of them contribute to the effective management of livestock on the allotments involved.

3.0 AFFECTED ENVIRONMENT

Table 3.16-2
Summary of Range Improvement Projects on the Ely District from 1958 to 2004

Range Improvement (Units)	Benefiting Livestock	Benefiting Watersheds	Benefiting Wildlife	Benefiting Other¹	Total
Seeding (acres)	16,564	17,765	1,170	206,598	242,097
Chainings (acres)	4,981	3,300	8,452	10,694	27,427
Burned or sprayed (acres)	960	0	0	3,560	4,520
Furrow or trench (acres)	0	627	0	0	627
Plowed (acres)	0	1,000	0	0	1,000
Fire rehabilitation (acres)	0	1,360	0	35,730	37,090
Fences (miles)	1,532	259	41	1,640	3,438
Corrals (number)	85	0	0	37	122
Cattleguards (number)	245	50	1	163	448
Wells (number)	91	5	1	195	292
Spring development (number)	80	8	1	65	154
Reservoirs (number)	91	4	0	106	201
Pipelines (miles)	320	60	0	163	541
Water hauls, troughs (number)	106	0	6	0	100
Guzzlers (number)	0	0	80	0	80

¹Benefiting Other refers to range improvement projects listed in the BLM database that have not been identified as being conducted specifically for one of the three other resource categories shown here.

3.17 Woodland and Native Plant Products**3.17.1 Existing Conditions**

Vegetation resources on the Ely District provide for a diversity of social, cultural, and economic uses. The utilization of vegetation as livestock forage is discussed in Section 3.16, Livestock Grazing. In addition, these resources are used as forest and woodland products (e.g., fuelwood, Christmas trees), traditional harvesting (e.g., food, basket material, medicinal and ceremonial purposes), and plant collecting (e.g., landscaping, cultivation). These uses predominantly involve plants characteristic of the Great Basin woodland (e.g., pinyon pine) and the Mojave Desert (e.g., Joshua tree, cactus), both of which are extensive on the District. The vast majority of these activities occur close to communities and along roads.

Woodland volumes vary considerably depending on species composition and density. The determination of successional stages in and production from woodlands was based on the descriptions for the Forestland Ecological Site Descriptions 28BY060NV and 029XY083NV, which are the most prevalent woodland sites in the District. The major successional stages and associated ranges of percent canopy cover within this ecological site include:

- Sapling – 5 to 10 percent canopy cover;
- Immature – 10 to 20 percent canopy cover;
- Mature – 20 to 40 percent canopy cover; and
- Over mature – over 40 percent canopy cover.

The pinyon and juniper woodlands cover approximately 3.6 million acres on the Ely District (see **Map 3.5-7 Pinyon Juniper Vegetation on BLM-administered Land in the Ely District**), and consist of the following categories and estimated acreages:

- Immature woodlands – 36,000 acres (approximately 1 percent of total acreage);
- Mature woodlands – 324,000 acres (approximately 9 percent of total acreage);
- Over mature woodlands – 2.9 million acres (approximately 80 percent of total acreage); and
- Pinyon-juniper woodland with invasive and noxious weeds dominant in the understory – 362,000 acres (approximately 10 percent of total acreage).

The woodland community is prevalent on side slopes with shallow, rocky soils. Pinyon pine and junipers historically have been used to make charcoal for mineral processing and provide for fuel and construction of early pit houses (Ronco 2003). Current uses include both personal and commercial harvest of fuelwood, poles and posts (primarily for fence building), Christmas trees, wildings or live transplants, and pinyon pine nuts.

Utah juniper and singleleaf pinyon contribute 50 to 70 percent and 30 to 50 percent of tree canopy composition, respectively. However, these percentages may vary based on differences in soil conditions, aspect, and precipitation levels within the District. Estimates of woodland production were based on potential production estimates provided in the ecological site descriptions as listed above. Pinyon-juniper

3.0 AFFECTED ENVIRONMENT

fuelwood sales in the District for 2004 included 1,581 cords. Assuming a rough average of 3 to 6 cords per acre, there are approximately 11 to 22 million cords of fuelwood in standing trees on the Ely District. Road access and slope limit the availability of these trees for fuelwood.

Woodland product sales in the District for 2003 also included 3,091 post and poles and 1,026 Christmas trees (predominantly pinyon pine trees) for individual and commercial use. Assuming an average of 15 to 30 posts and poles per acre, there are approximately 54 to 108 million posts and poles in standing trees in the District. Assuming an average of 15 Christmas trees per acre (based on pinyon pine trees comprising 30 percent of the woodlands), there are approximately 15 million Christmas trees in the District.

Various parts of the pinyon pine have been used for food and medicine and continue to have spiritual significance to some groups. Pinyon pine nut crops are variable by year and geographic location. Harvesting occurs in the fall, and plentiful crops occur every 3 to 7 years. Pinyon pine nut harvest was and still is the center of many tribal ceremonies, and tribal elders still participate in the collecting activities.

Sales in the District for 2003 included 41,500 pounds of pinyon pine nuts for commercial use.

The Mojave Desert vegetation, located in the southern portion of the District, is used in horticulture for xeric landscaping (e.g., cacti, yuccas, and creosotebush), and some species may be collected to place into cultivation (e.g., ephedra). According to Nevada State Law (NRS 527.060), a permit must be obtained for the collection of cacti and yucca within the state.

Various riparian species (e.g., willows) also are used by American Indians for basketry and other purposes.

3.17.2 Trends

As described in the Great Basin Restoration Initiative and Section 3.5, Vegetation, the pinyon-juniper woodland on the Ely District and elsewhere in the Great Basin is increasing in density of trees and extent of coverage. Tree species, especially singleleaf pinyon and juniper, are spreading and becoming established in areas today that are below their historic elevational limits and now occupy approximately 1.3 million acres of sagebrush habitat (Rowland 2003). Therefore, the availability of pinyon and juniper trees for fuelwood and other products currently is increasing. However, the trend toward more frequent and severe wildfires may counter some of this increase.

The trends in usage of woodland products and other native plant material remain static. Public demand for vegetation products includes interest in natural ingredients for products ranging from cosmetics to medicines. Demand for fuelwood is not considered to be high, and the demand by commercial fuelwood cutters is low.

3.17.3 Current Management

Current uses are managed as described in **Table 3.17-1**. Personal use is distinguished from commercial use based on whether the product is for resale or not. Permits for commercial pinyon pine nut harvesting are

3.17 Woodland and Native Plant Products

sold by auction to the highest bidder. All desert vegetation collections are available, but limited, on the Ely District to areas designated for salvage due to planned ground disturbances.

3.0 AFFECTED ENVIRONMENT

Table 3.17-1
Summary of Current Management of Woodland and Native Plant Products

Product Type	Type of Use	Species	Live	Dead	Availability	Comments
Fuelwood	Personal use	Pinyon, juniper	X	X	District-wide except in designated Wilderness, Wilderness Study Areas, and other restricted areas.	2 cord minimum
		Mountain mahogany	X		Only in designated areas.	
		Mountain mahogany		X	District-wide except in designated Wilderness, Wilderness Study Areas, and other restricted areas.	
Posts and Poles	Commercial use	Pinyon, juniper	X	X	District-wide except in designated Wilderness, Wilderness Study Areas, and other restricted areas.	6 cord minimum
	Personal and commercial use	Pinyon, juniper	X	X	District-wide except in designated Wilderness, Wilderness Study Areas, and other restricted areas.	
	Personal use	Pinyon, juniper	X	NA	District-wide except in designated Wilderness, Wilderness Study Areas, and other restricted areas.	
Pinyon Pine Nuts	Commercial use	Pinyon, juniper	X	NA	District-wide except in designated Wilderness, Wilderness Study Areas, and other restricted areas.	
	Personal use	Pinyon	NA	NA	District-wide.	No permit needed, 25 pound maximum
	Commercial use	Pinyon	NA	NA	Only in designated areas.	Sold by auction
Collection of Desert Plants	Personal use	Joshua tree, cactus, and succulents	X	X	Only in designated areas.	Salvage only
Collection of Native Plants	Personal use	All non-succulent plants, seeds, or parts and willows	X	X	District-wide except in designated Wilderness, Wilderness Study Areas, and other restricted areas.	

NA = not applicable.

3.18 Geology and Mineral Extraction**3.18.1 Existing Conditions****Physiography and Topography**

The Ely District is located in the Basin and Range physiographic province and is within a sub-province called the Great Basin (Eaton 1979). The Basin and Range province is characterized by generally north-south trending mountain ranges and valleys and encompasses portions of a number of states including Arizona, California, Idaho, Nevada, New Mexico, Oregon, Utah, and Texas. In the Ely District, the mountains and valleys follow the Basin and Range north-south pattern with ranges being about 5 to 15 miles wide and 20 to 100 miles long.

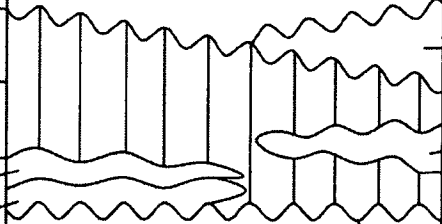
In the Ely District, elevations range from less than 2,000 feet in the valleys of southern Lincoln County to 10,993 feet at Mount Grafton. Some higher elevation peaks (e.g., Wheeler Peak) are located on lands administered by the Humboldt National Forest and surrounded by public lands of the Ely District. Generally, the valley floors in the northern part of the District are higher than in the southern areas with elevations ranging from 6,000 to 7,000 feet. Elevations in the mountain ranges are generally from 7,500 to 10,000 feet. The highest mountain ranges are in the northern part of the planning area, with the Snake Range (location of Wheeler Peak) being the highest and the Schell Creek Range containing several peaks above 11,000 feet.

The mountain ranges in the Ely District generally consist of volcanic and sedimentary rocks (Stewart and Carlson 1978). Erosion has created rugged terrain in the mountains and some areas show evidence of glaciation in the past (Price et al. 1999). The valleys contain material (valley fill) eroded from the mountains. The valley fill can be thousands of feet thick and the deposits consist of poorly sorted alluvial fan deposits adjacent to the mountain ranges to fine-grained playa (dry lake) deposits and sand dunes in the valley floors.

Most of the area is internally drained and surface runoff is confined to the basins. A few drainages in the southern part of the District in Lincoln County drain into the Virgin River. Those drainages are, from west to east, Coyote Spring Valley, Meadow Valley Wash, and Toquop Wash. The White River Valley, which is located on the eastern edge of Nye County and extends into White Pine County, drains into the Coyote Spring drainage. The Virgin River drains into the Colorado River at Lake Mead, south of the Ely District southern boundary.

Stratigraphy and Geologic History

The geologic units in the Ely District range from Precambrian in age (more than 570 million years old) to Recent. **Figure 3.18-1** is a generalized stratigraphic nomenclature chart of the Ely District. **Table 3.18-1** provides a summary of the associated regional geologic history. The chart and the map have been compiled from several sources and the geology was simplified to show the general geology of the area. The Precambrian rocks consist of intrusive igneous rocks, metamorphic rocks, quartzites, and phyllites.

ERA	SYSTEM		FORMATION OR GROUP
		SERIES	
CRETACEOUS	Quat.	Pleistocene	Alluvial conglomerate
	TERTIARY	Pliocene	Muddy Creek Fm, Panaca Fm
		Miocene	Garrett Ranch Group
		Oligocene	
		Eocene	
		Paleocene	Sheep Pass Formation
MESOZOIC	CRETACEOUS		
	JURASSIC		
	TRIASSIC	Chinle Fm. Moenkopi Fm.	
PALEOZOIC	PERMIAN	Limestone and sandstone	
	PENNSYLVANIAN	Ely Limestone	
	MISSISSIPPIAN	Scotty Wash	
		Diamond Peak Fm.	Chainman Shale
		Joana Limestone	
		Pilot Shale	
	DEVONIAN	Guilmette Limestone	
		Simonson Dolomite	
	SILURIAN	Sevy Dolomite	
		Laketown Dolomite	
	ORDOVICIAN	Ely Springs/Fish Haven Dolomite	
		Eureka Quartzite	
		Pogonip Group	
	CAMBRIAN	Windfall Formation	
Dunderberg Shale			
Highland Peak Formation			
Pole Canyon Formation			
Pioche Shale			
PRE-CAMBRIAN (Proterozoic)			Prospect Mountain Quartzite
			Igneous and Metamorphic Rocks

Johnnie Mountain Fm.

BLM Ely District RMP/EIS

Figure 3.18-1

Stratigraphic Nomenclature
Chart

Sources: Modified from Peterson and Grow (1995).

Table 3.18-1
Summary of the Geologic History of the Ely District

Geologic Era	Geologic Period	Millions of Years Before Present	Major Geologic Events
Cenozoic	Quaternary	1.6-present	Crustal extension continues resulting in Basin and Range earthquakes, mountain building, volcanism, and geothermal activity. Glaciers formed in the higher mountains more than 10,000 years before present. Glacial action results in the rugged topography of the higher mountains.
	Tertiary	65-1.6	Crustal extension begins 20 million years before present. The extension results in Basin and Range normal faulting, mass gravity sliding, and igneous activity. Many ore deposits emplaced during this period.
Mesozoic	Cretaceous	144-65	Cretaceous period ending with extinction of the dinosaurs and many other species. Granitic igneous intrusions were widespread causing the formation of metallic ores such as the copper-gold-silver-lead-zinc ores of the Robinson Mining District. Thrusting from Sevier Orogeny causes folding and faulting and movement of large sheets of rock from west to east.
	Jurassic	208-144	Intrusion of igneous rock in the vicinity of the present-day Snake Range. Sedimentary rocks not deposited or were later eroded.
Paleozoic	Triassic	245-208	Moenkopi and Chinle formations deposited in continental and shallow marine conditions.
	Permian	286-245	During most of Paleozoic time, shallow marine conditions persisted resulting in the deposition of thousands of feet of limestone, shale, and lesser amounts of quartzite. Organic-rich Mississippian Chainman Shale is a possible source rock for petroleum generation. Antler Orogeny occurs from Devonian to Mississippian, influencing deposition of sediments in east-central Nevada.
	Pennsylvanian	320-286	
	Mississippian	360-320	
	Devonian	408-360	
	Silurian	438-408	
	Ordovician	505-438	
Precambrian	Cambrian	570-505	
		1,450-570	Igneous and metamorphic rocks formed in ancient crust. Eventually, a stable continental margin is formed resulting in deposition of the Johnnie Mountain Formation and younger Precambrian portion of the Prospect Mountain Quartzite. The stable continental margin persisted throughout most of Paleozoic time.

Sources: Hose et al. 1976; Peterson and Grow 1995; Price et al. 1999; Rowley and Dixon 2001; Tschanz and Pampayan 1970.

3.0 AFFECTED ENVIRONMENT

The entire section of sedimentary rock from Cambrian through Permian (Paleozoic Age) is over 35,000 feet thick and consists primarily of limestone, dolomite, shale, and sandstone. The Paleozoic section also includes metamorphic rocks derived from tectonic events or altered by emplacement of igneous rocks (Tschanz and Pampeyan 1970). The Paleozoic-aged shales may be source rocks for the oil fields in the Railroad Valley that are just outside of the Ely District and also are the possible source of the numerous shows of oil and gas found in wells drilled in the District (Peterson and Grow 1995).

Sedimentary rocks of the Mesozoic-age consist primarily of sandstone and shale, are about 10,000 feet thick, and belong to the Moenkopi and Chinle formations. The Mesozoic rocks are found primarily in southeast Lincoln County. There also are intrusive igneous rocks from the Jurassic and Cretaceous consisting of granite-like rocks including monzonite, quartz monzonite, and granodiorite. Important Cretaceous-age intrusive rocks include quartz monzonite that is associated with the mineralization at the Robinson, Bald Mountain, and Mount Hamilton Mining Districts. Jurassic-age intrusive igneous rocks are found in the Snake Range (Tschanz and Pampeyan 1970; Hose et al. 1976).

Tertiary-age strata consists of sedimentary and volcanic rocks. The sedimentary formations, as described below, are not continuous over the area but are defined in local areas. Equivalents may be present from basin to basin, but are not identified as distinct formations. The Tertiary-age sedimentary deposits are part of the valley fill sediments that range in age from lower Tertiary to Recent. The thickness of the valley fill varies from basin to basin, but can be thousands of feet thick. The oldest sedimentary unit is the Sheep Pass Formation that is slightly more than 3,000 feet thick and is composed of lake-derived limestone, sandstone, and siltstone (Hose et al. 1976). The type section for the Sheep Pass Formation is located on the crest of the Egan Range. The lower part of the formation is a conglomerate that is composed of fragments from older Paleozoic formations. Invertebrate and vertebrate fossils in the formation indicate that it is Eocene in age, but Peterson and Grow (1995) also indicate that it may be Paleocene. Other later Tertiary-age sedimentary deposits include the Pliocene-age Muddy Creek and Panaca formations that are found in the southern part of the District. These units were deposited in lakes and consist of sand, silt, clay, and limestones (Tschanz and Pampeyan 1970). Other younger Tertiary sedimentary deposits present in the District were dated on the basis of the presence of vertebrate fossils, but they have no specific formation names (Hose et al. 1976).

Many of the Tertiary rocks are composed of volcanic-derived materials called ignimbrites that are formed from ash flow-type volcanic eruptions. The Tertiary volcanic rocks range in age from late Eocene to Pliocene, but the thickness is undetermined. Some measured sections are over 2,000 feet thick (Cook 1965). However, there is a general trend that the Tertiary volcanic rocks are thicker in the south (possibly from 5,000 to 10,000 feet thick) and thinner to the north (Tschanz and Pampeyan 1970; Hose et al. 1976). In some areas, the Tertiary sediments and volcanics are interbedded, and some of the sedimentary deposits are primarily composed of volcanic materials. Tertiary intrusive rocks also are present, but are not well exposed on the surface and the outcrops are scattered on various mountain ranges throughout the District. The intrusives include granite, granodiorite, monzonites, quartz monzonites, and diorites. Rhyolite, dacite, quartz latite, and other shallow intrusive rocks may have been the source for volcanic ash flows.

Late Tertiary, Quaternary, and Recent sedimentary deposits consist of unconsolidated materials and include lake deposits, playas, dunes, alluvium, and alluvial fans. These deposits may be thousands of feet thick in the valleys, but much of the originally deposited material may have already been eroded (Tschanz and Pampeyan 1970). The lake deposits, playas, and dunes generally are composed of fine-grained materials, and the alluvium and alluvial fans contain coarse-grained materials.

Structural Geology

The geologic structure of the Great Basin was created by interactions between the North American and Pacific tectonic plates (Rowley and Dixon 2001). The geologic structure of the Ely District is complex, because successive episodes of faulting have obscured earlier faulting. There are four major types of fault styles in the District: low angle reverse, *ecoulement*, strike-slip, and normal faults (Tschanz and Pampeyan 1970; Hose et al. 1976). The low angle reverse (or thrust) faults are associated with an episode of mountain building (the Sevier Orogeny) that occurred in the mid to late Mesozoic and possibly into the early Cenozoic (Price et al. 1999). The Sevier Orogeny was characterized by compressional movement that caused strata to be uplifted and moved laterally over other strata, often for tens of miles. The resultant thrust faults caused older rocks to be moved over younger rocks. Major thrust faults have been defined by oil and gas exploration in northeastern Nevada (Moulton 1984).

The second type of fault or dislocation, the *ecoulement*, is caused by the sliding of large blocks due to uplift and tilting. It is believed that large *ecoulements* (gravity slides or detachments) occurred during the mid to late Tertiary in response to uplift caused by the upward movement of magmas coupled with extension of the crust (Francis and Walker 2001). Possible examples of gravity sliding have been found in the Mormon Mountains, the Bristol Range, the Pintwater Range, and the southern Egan Range (Tschanz and Pampeyan 1970). The western side of the Grant Range also may be bounded by a large detachment fault (Montgomery 1997; Francis and Walker 2001).

The third type of faulting, strike-slip faults, are caused when pieces of the crust move past each other laterally. There are two major strike-slip faults in southwestern Lincoln County, cutting across the grain of the mountain ranges in a generally southwest to northeast direction (Tschanz and Pampeyan 1970). These faults are thought to have occurred in the late Tertiary and are believed to be analogous to major active strike-slip faults like the San Andreas in California where movement is in response to major plates of the earth sliding past one another. The Ely-Black Rock Fault, a major northwest-southeast strike-slip fault, cuts across White Pine County along a line from Baker to Ely and to the western edge of the county (Thorman and Kentner 1979). The Ely-Black Rock Fault is thought to be related to crustal adjustments caused by the Sevier Orogeny.

The fourth type of fault style, the one that caused the present-day physiography (basin and range) is normal faulting. Most of the mountain ranges are bounded on at least one side by a major high-angle normal fault. The mountains represent the uplifted blocks and the valleys are downthrown blocks. The amount of displacement on the faults can range from 1,000 to 15,000 feet or more (Bortz and Murray 1979; Hose et al. 1976). The present-day structure began to evolve about 20 million years ago as movement of the Pacific plate began to cause crustal extension that resulted in the dominant normal faulting (Rowley and

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Dixon 2001). Most of the normal faulting in eastern Nevada is believed to have occurred in the late Tertiary, but many faults were active into the Quaternary (Howard et al. 1978). It is believed that many of these high-angle faults flatten at depth and intersect a zone of detachment that may be related to earlier thrust faulting (Eaton 1979). Erosion of the mountain blocks resulted in the deposition of thousands of feet of valley fill on the downthrown blocks.

Geologic Hazards

The two major types of geologic hazards that have the potential to affect the Ely District are earthquakes and landslides. Because of the nature of the geology in the area, the potential for each of the above-named hazards to affect the area is low. Each of the hazards is discussed below.

Earthquakes. Earthquakes occur when movement occurs on faults and energy is released into the surrounding rocks. The severity of an earthquake is dependent on a variety of factors including the amount of movement that has occurred on the fault, the composition of the surrounding rock, and distance from the source of the earthquake. In order to assess the potential severity of earthquakes in any given area of the country, the U. S. Geological Survey has developed seismic hazard maps that try to predict the amount of ground motion that could occur from a severe earthquake (U.S. Geological Survey 2002). Based on the ground motion map, the Ely District is not expected to experience strong ground motions that would cause substantial damage to buildings or other structures. However, in the south-central portion of Lincoln County is area that might expect stronger ground motions than the rest of the District. Data compiled by the Nevada Bureau of Mines and Geology (1999) shows a large number of small seismic events in that portion of Lincoln County.

Landslides. Landslides are relatively rare in the Basin and Range province (Radbruch-Hall et al. 1980). The most common large-scale movement of earth material occurs as debris flows that occur as a result of torrential rains. Landslides in the area commonly occur where volcanic sediments are capped by more resistant rocks and erosion of underlying softer material creates unstable situations. Landslides also can occur where fractured carbonate and crystalline rocks form steep slopes and the fracture planes coupled with erosion cause instability. In addition, slope instability can result from anthropogenic causes such as construction and mining.

3.18.2 Mineral Resources

The Ely District manages the mineral resources on 11.4 million acres of federal land. Most of this acreage includes surface and mineral ownership. Within legal constraints, all publicly owned minerals are available for exploration, development, and production, while subject to existing regulations, standard terms and conditions, and stipulations. Federally owned minerals in the public domain are classified into three categories: leasable minerals, locatable minerals, and saleable minerals as discussed below. The classifications are based on acts passed by the U.S. Congress.

Leasable minerals are those minerals that are leased to individuals for their exploration and development. The leasable minerals have been subdivided into two classes, fluid and solid. Fluid minerals include oil and gas; geothermal resources and associated by-products; and oil shale, native asphalt, oil impregnated sands

and any other material in which oil is recoverable only by special treatment after the deposit is mined or quarried. Solid leasable minerals are specific minerals such as coal and phosphates. All minerals on acquired lands are considered to be leasable minerals. Leasable minerals are associated with the following laws: Mineral Leasing Act of 1920, as amended and supplemented, Mineral Leasing Act for Acquired Lands of 1947, as amended, and the Geothermal Steam Act of 1970, as amended.

Locatable minerals are those that have been described as "valuable mineral deposits." These include precious and base metal ores such as gold, silver, copper, or lead, and certain industrial minerals such as pozzolan, gypsum, chemical grade limestone, chemical grade silica sand, and decorative stone. Uncommon varieties of mineral materials such as pumice, rock, and cinders also are regulated as locatable minerals. These minerals are regulated under the General Mining Law of 1872, as amended, and Surface Use and Occupancy Act of July 23, 1955.

Saleable minerals are common mineral materials that include sand, gravel, and common clay. Saleable minerals are sold through contract and are regulated under the Mineral Material Act of July 23, 1947, as amended, and the Surface Use and Occupancy Act of July 23, 1955.

The Mining and Mineral Policy Act of 1970 declares that it is the continuing policy of the federal government to foster and encourage private enterprise in the development of domestic mineral resources. Section 102 of the Federal Land Policy and Management Act directs that the public land be managed in a manner which recognizes the nation's need for domestic sources of minerals and other commodities from the public lands, while managing these lands in a manner that would protect scientific, scenic, historic, archaeological, ecological, environmental, and atmospheric and hydrological values. The BLM's mineral policy (1984) states that, "Public lands shall remain open and available for mineral exploration and development unless withdrawal from other administrative actions is clearly justified in the National interest."

Leasable Minerals

Oil and Natural Gas. Although commercial hydrocarbons have not been discovered in the Ely District, oil is produced from fields just outside of the District in the Railroad Valley in northeast Nye County and also in areas north and northwest of the District in Eureka and Elko counties. Although the northern part of Railroad Valley extends into the Ely District, no commercial oil production has been established in the Ely District portion of the valley. The fields in Eureka County are located in the Pine Valley (Nevada Division of Minerals 2002), and another field is located in central Elko County. These fields are not as prolific as the Railroad Valley fields.

Oil was discovered in Railroad Valley in 1954 at Eagle Springs. Almost 41 million barrels of oil have been produced from oil fields in the Railroad Valley from 1954 through 2001, with Grant Canyon being the largest producer (Nevada Division of Minerals 2002). The fields are characterized by complex traps, and crude oil is the primary hydrocarbon commodity. A total of nine producing fields have been discovered in the Railroad Valley, some of which have had prolific production wells such as at Grant Canyon. Most of the 21 million barrels of oil produced at Grant Canyon came from just 2 wells (Montgomery 1997). For a period of time, the wells at Grant Canyon had some of the highest daily producing rates for onshore oil wells in the contiguous

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U.S. Hydrocarbon reservoirs in Railroad Valley include the Garrett Ranch, Sheep Pass, and Guilmette formations as well as an unspecified Devonian-aged zone at Ghost Ranch. The Garrett Ranch Formation is an uncommon type of petroleum reservoir composed of ignimbrites (volcanic rock) (Bortz and Murray 1979). The carbonate rocks of the Sheep Pass Formation also produce at two fields in the Railroad Valley, but the Sheep Pass Formation may be of lesser importance as a reservoir than as a possible hydrocarbon source rock. All the named hydrocarbon reservoirs and potential source rocks are present in the Ely District.

Exploration for oil and gas has been conducted in the Ely District since 1920 when the Illipah Syndicate drilled a well in the Barrel Springs area of the White Pine Range in White Pine County. The well was drilled in Section 11, Township 17 North, Range 58 East and reached a total depth of 929 feet with gas and oil shows (evidence of oil and gas) (Garside et al. 1988). The Illipah Syndicate drilled three more wells in the 1920s in the Barrel Springs area with numerous oil and gas shows, but with no commercial results.

About 181 wells have been drilled in the Ely District since the 1920s (Snow 2003). Since 1950, slightly more than 170 wells have been drilled in the District, and 90 percent of them were abandoned with no production. Many of wells had abundant evidence of the presence of hydrocarbons, but not in commercially producible quantities. About 9 percent were indicated to be productive, but no fields were established, and it is likely the wells proved uneconomic over a short period of time (Garside et al. 1988). A small percentage of wells were converted to disposal wells or water wells. Drilling activity in the 1950s was sparse with only one well drilled in some years and in other years no drilling occurred. Since 1964, an average of about 4 wells per year have been drilled in the District, with most of the wells being drilled in White Pine County (Hess 2001). However, 50 wells have been drilled in the Nye County portion of the Ely District, and most of those are in the Railroad Valley. Most of the drilling occurred on federal leases, and the overwhelming amount of leased minerals are owned by the federal government. There are approximately 1,179,725 acres of leased federal minerals.

More than one-third of the wells in the Ely District were drilled to depths of between 2,500 and 5,000 feet. A little more than 5 percent of the wells were drilled to more than 10,000 feet deep. The deepest well in the District, drilled in 1983, was the Commodore Resources Outlaw Federal #1 drilled to a total depth of 13,000 feet in White Pine County (Section 1, Township 10 North, Range 70 East). The well was drilled east of the Snake Range and had reported hydrocarbon shows, but tests on the oil were not conclusive of naturally occurring hydrocarbons (Poole and Claypoole 1984).

The U.S. Geological Survey (Peterson and Grow 1995) estimated the potential undiscovered technically recoverable hydrocarbon resources for the Eastern Basin and Range area, of which the Ely District is part. Their estimates, when extrapolated to the Ely District, indicate that the potential hydrocarbon resource in the District is nearly 98 million barrels of oil and almost 16 billion cubic feet of natural gas. These estimates are the mean values presented by Peterson and Grow (1995). Low-grade coal (lignite) is present in the Ely District, but thick, extensive, mineable deposits have not been found. Therefore, there is very low or no potential for coalbed natural gas resources in the district. Therefore, coalbed natural gas is not included in the natural gas resource estimate.

Based on the foregoing, much of the Ely District has a high potential for hydrocarbons based on the following geologic characteristics:

- Presence of hydrocarbon source rocks
- Evidence of thermal maturation
- Presence of reservoir rocks with adequate porosity and permeability
- Potential for hydrocarbon traps to exist

There are places in the District where Precambrian-age metamorphic and volcanic rocks are the dominant surface rock types, but the presence of these rocks does not preclude the potential for the occurrence of deeper hydrocarbons in these areas. It is possible that hydrocarbon resources may have been buried by thrust faults or extrusive igneous rocks and that current exploration techniques, exclusive of random drilling, cannot define the location or depth of these hidden potential resources.

Geothermal Energy. Geothermal resources are an important source of energy in Nevada. In the western and central part of the state there are a number of geothermal power plants (Shevenell et al. 2000). In the year 2000, there were a reported 15 geothermal power plants with a total capacity of nearly 229 megawatts. Essentially, hot groundwater is tapped by drilling wells and is used to power turbines to generate electricity. Other applications of geothermal energy in Nevada involve using geothermal heat for uses from industrial to recreational activities ranging from vegetable dehydration to spas and pools.

The northwest part of Nevada has the highest occurrence of water temperatures greater than 75 degrees Centigrade (Garside 1994). The high temperatures are believed to be related to circulation of groundwater along faults in an area of higher heat flow. In the eastern and southern parts of the state, there are generally low to moderate temperature geothermal resources. The source of the heat is believed to originate from the circulation of groundwater in fractured carbonate aquifers. The area of low to moderate temperature geothermal resources includes the Ely District. Although the Ely District is within an area dominated by low to moderate geothermal temperatures, there are 6 hot wells (greater than 37 degrees Celsius) in the district; the hottest well is located in the northern Steptoe Valley with a recorded temperature of 151 degrees Celsius (Garside 1994; Shevenell et al. 2000). In addition, there are several hot springs, mainly located in White Pine and eastern Nye counties. There are numerous warm springs and wells (less than 37 degrees Celsius) scattered throughout the District. In Caliente and Ash Springs, warm springs are used for pools, spas, and space heating.

Areas of established geothermal production are categorized as known geothermal resource areas. There are no known geothermal resource areas in the Ely District. Only one current geothermal lease is active in the Ely District. The lease consists of 1,004 acres and is in the Cherry Creek area.

Solid Leasable Minerals. Solid leasable minerals include coal, oil shale, phosphate, and sodium minerals. There are no known economic deposits of these commodities in the Ely District and there are no active leases for solid leasable minerals.

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Locatable Minerals

The Ely District contains numerous types of locatable mineral deposits. The following is a summary of the major locatable mineral deposits in the Ely District.

- Copper has been the most important locatable mineral resource in the Ely District. Since 1906, copper has been mined at the Robinson Mining district, just west of Ely, Nevada. The district has produced over 5 billion pounds of copper (Hose et al. 1976). The remaining reserve is estimated at 200 million tons of copper ore. Operation and production were renewed at the Robinson Mine in late 2004.
- Gold is an important commodity that was produced at the Robinson district, but also is found in many mining districts in the Ely District. Gold presently is being mined at the Bald Mountain district in northwest White Pine County. Small scale placer mining of gold is occurring in the Osceola District. There is an estimated 30 billion tons of disseminated gold in the Bald Mountain-Alligator Ridge area (Ilchik 1996). Important gold deposits also have been mined in the Delamar district in Lincoln County (Tschanz and Pampeyan 1970). Minor amounts of gold were produced from deposits in the Nye County portion of the Ely District (Kleinhampl and Ziony 1985).
- Lead and zinc have been mined extensively in the Ely District. Important mining districts include the Pioche, Jackrabbit, and Bristol in Lincoln County (Tschanz and Pampeyan 1970). Lead and zinc also are present in many mining districts in White Pine County (Hose et al. 1976)
- Silver has been an important commodity in the Ely District as bonanza silver deposits are associated with lead, zinc, and gold deposits. Important silver deposits were mined in the Pioche, Bristol, Jackrabbit, Highland, and Groom districts in Lincoln County (Tschanz and Pampeyan 1970). Silver was produced as a by-product of copper production at the Robinson district. Substantial amounts of silver also were produced in the Hamilton, Cherry Creek, Ward, and Taylor districts in White Pine County as byproducts of gold mines (Hose et al. 1976).
- Tungsten has been mined at the Tempiute district in Lincoln County and in the Cherry Creek district in White Pine County (Tschanz and Pampeyan 1970); (Hose et al. 1976).
- Pozzolana, a commodity derived from volcanic ash, has been mined in Lincoln County. Increased demand for pozzolana (used in making concrete) has resulted in proposals for new mining operations.
- Radioactive mineral deposits occur as uranium mineralization associated with other mineral deposits and as uranium mineralization in sedimentary and volcanic rocks. To date, none of these deposits have been put into production. The following types of uranium mineralization have been identified in the Ely District (Garside 1973):
 - Uranium mineralization associated with volcanic tuffs and tuffaceous sedimentary rocks. This type of mineralization is common in the Panaca Formation of Lincoln County.

- Uranium and anomalous radioactivity associated with quartz veins and quartz fluorite veins.
- Uranium and anomalous radioactivity associated with secondary iron and manganese oxides within and adjacent to sulfide mineral deposits.
- Reports of anomalous radioactivity in mine dumps and mine workings.
- Uranium mineralization associated with the gold deposits of the Atlanta District in Lincoln County.

Saleable Minerals. Sand and gravel are the most common types of mineral materials sold on public lands. These materials are found throughout the District, usually in alluvial fans along the edges of the valleys. Common varieties of limestone, dolomite, and quartzite rocks are quarried for building stone and landscape materials.

3.18.3 Trends

Leasable Minerals

Oil and Natural Gas. As of January 2005 there were 459 federal oil and gas leases covering approximately 1,031,036 acres in the Ely District (see **Map 3.18-1**). As federal oil and gas leases expire, those lands may be nominated for leasing again. The BLM conducts lease sales every quarter. For the 13 lease sales held from 2000 through 2004, a total of approximately 1,207,673 acres were leased in competitive and non-competitive categories. An annual summary of the lease sales is shown in **Table 3.18-2** (ENSR 2003). Total bonus bids received for the period, rental, and fees received were \$2,283,121. Half of the bonus money bid for public domain minerals went to the State of Nevada. The remainder of the bonus money stayed with the Federal Treasury, where it was split between the conservation fund and the general fund on a 4:1 ratio, respectively.

Table 3.18-2
Lease Sale Summary 2000 – 2004
Ely District

Year	Number of Leases ¹	Average Acreage Per Lease	Total Acreage Leased/Year	Average Bonus + Rental + Fees (dollars)	Total Bonus + Rental + Fees (dollars)
2000	33	3,079	95,199	4,688	154,714
2001	172	3,509	533,876	5,888	1,012,766
2002	29	3,766	109,226	6,214	180,199
2003	56	1,392	72,453	3,868	216,583
2004	119	2,673	287,969	6,092	718,859
Total			1,098,723		2,283,121
Average/Year			219,745		456,624

¹Source: LR2000.

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It is anticipated that the amount of federal oil and gas acreage under lease in the Ely District between 2005 and 2025 will range between 1.18 and 1.5 million acres. Based on June 2000 to June 2003 numbers, additional annual federal acreage leased is projected to average 65,000 acres. However, acreage additions would be offset by leases that will expire if commercial hydrocarbons are not discovered. It cannot be predicted at this time how much acreage eventually will be held by production, which is entirely dependent on the discovery of commercial oil and gas fields. Revenues generated from lease rentals alone in the Ely District could generate millions of dollars during the 2005 to 2025 period. If substantial oil and gas discoveries are made, making offered leases more attractive and bidding up of the bonuses, substantially more revenue could be generated.

Based on the reasonably foreseeable development scenario, it is estimated that many as 448 oil and gas exploration and development wells could be drilled over the next 20 years. This number is a hypothetical estimate based upon what could reasonably be expected to occur. There are some major assumptions upon which oil and gas development activity is based. Those assumptions include:

- There would be no substantial change in the laws, regulations, or policies governing management of oil and gas resources.
- The reasonably foreseeable development scenario is made without respect to any existing or proposed leasing stipulations and conditions of approval according to BLM Instruction Memorandum No. 2004-089 concerning policy for the reasonably foreseeable development scenario for oil and gas dated January 16, 2004 (BLM 2004b).
- The actual locations of potential exploration wells and field development are unknown. The impacts associated with these activities are likely to occur anywhere within the resource area that is of high or moderate potential for oil and gas resources.

Based on past exploration drilling and field discovery history, most of the exploration is likely to occur in the valley floors. Historically, oil discoveries in Nevada have been exclusively in the valley floors adjacent to the mountains. For planning purposes, all of the valley areas are considered to have high development potential. It is expected that 90 percent or more of the activity would take place in the valley areas.

Drilling trends may fluctuate greatly, from no drilling occurring over 5 consecutive years to half of the wells being drilled in a 10-year period. Each new discovery would foster an increase in drilling activity that may last for 2 to 3 years. In addition, advances in technology that facilitate the discovery and production of hydrocarbons could affect the amount of exploratory drilling and subsequent developmental drilling that could occur.

Geothermal Energy. In spite of the existence of hot temperatures recorded in geothermal exploration wells, very limited exploration and development is expected to occur. Up to 30 geothermal gradient wells may be drilled resulting in one exploration well. If a geothermal resource is discovered that would support a power generation plant, a total of three geothermal wells could result with other infrastructure such as generating facilities, pipelines, power lines, and roads.

Solid Leasable Minerals. There are no known deposits of solid leasable minerals within the Ely District. There are no leases of minerals on acquired lands that would be managed as solid leasables. The Ely District does not expect to see much change in this status in the future.

Locatable Minerals

In addition to the Robinson Mine, other active locatable minerals mining in the Ely District is in the Bald Mountain district, where gold is mined at the Bald Mountain Mine. The highly productive Carlin-Cortez Trend may extend into White Pine County, suggesting the potential for future gold discoveries. Since 1995, the Nevada gold industry has focused on development of new reserves near existing mines in the Carlin Trend to keep total operating costs and startup costs down. Because of the consolidation of mining companies during the period from 1995 to 2000, the Nevada gold industry is poised to continue developing new reserves in the Carlin Trend near existing deposits and within proven gold areas.

For the Nevada gold industry to expand beyond the Carlin Trend and develop new deposits in White Pine and Lincoln counties would require sustained gold prices above \$350 per ounce and preferably above \$400 per ounce. Prices at those levels are needed because of the increased total operating costs and startup costs that would be incurred developing new mines in areas that do not have the infrastructure to support large-scale mining. Thus, the economics of the U.S. gold industry and the economics of the "new" Nevada gold industry that has resulted from the consolidation of mining companies favors development of new reserves in areas of existing mining, rather than exploration and development in new areas. The Nevada gold industry has proven reserves sufficient for at least another 15 years of mining in the Carlin Trend. There is, therefore, no short-term pressure on the Nevada gold industry to replace reserves through exploration in "unproven" areas. However, recent increases in the price of gold to values above \$350 per ounce have resulted in renewed exploration interest in White Pine County, where many smaller gold deposits were discovered and mined between 1985 and 1995. It is expected that gold exploration in White Pine County and in the Ely District will continue to increase over the next 20 years if gold prices stay above \$350 per ounce.

Copper is a commodity controlled by world supply and production costs in third-world countries. Currently, copper prices are above \$1.00 per pound and may stay there for a few years due to a sharp increase in demand from China and India coupled with low production over the past 5 years.

Other locatable mineral commodities in the Ely District, such as lead, uranium, zinc, and tungsten, are not likely to be produced over the next 20 years unless commodity prices rise and encourage exploration and development of these minerals.

Saleable Minerals. The demand for saleable minerals has increased in the last decade. In Nevada, the main population growth over the past 10 years has been in the Las Vegas area. Sand and gravel are in increasing demand to meet the needs for new construction throughout Southern Nevada. There also is an increased demand for decorative rock and landscape material which has an even wider market throughout the western states. This trend for increased demand of these saleable minerals is expected to continue.

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3.18.4 Current Management

Leasable Minerals

Mineral operations for leasable minerals are conducted under 43 Code of Federal Regulations 3100 for oil and gas, 43 Code of Federal Regulations 3200 for geothermal resources, and 43 Code of Federal Regulations 3500 for solid leasable minerals. Oil, gas, and geothermal are referred to as fluid leasable minerals. Coal and phosphates are examples of solid leasable minerals. These regulations provide for processing these types of mineral case files. The regulations are further defined for exploration versus development. To ensure that all operations are conducted with adequate consideration to environmental and resource concerns, RMPs develop leasing stipulation which are attached to lease agreements. Once the lease has been established, the operator may conduct exploration under 43 Code of Federal Regulations 3150 for oil and gas, and 43 Code of Federal Regulations 3252 for geothermal resources. The development and production of oil and gas is conducted under 43 Code of Federal Regulations 3160, and for geothermal resources under 43 Code of Federal Regulations 3261. Solid leasable exploration is conducted under 43 Code of Federal Regulations 3505 and 3506. Leases for solids are issued under 43 Code of Federal Regulations 3507 and 3508, while operations are conducted under 43 Code of Federal Regulations 3517. These regulations provide for an interdisciplinary review of any proposed exploration, drilling, or production operation. These activities have additional resource protection through mitigation measures developed through the environmental reviews.

Management decisions would follow Interim Management Policy and guidelines for mineral leasing in Wilderness Study Areas and Instant Study Areas. Leases that have been grandfathered in Wilderness Study Areas would conduct operations as outlined in the Interim Management Policy and guidelines. All Wilderness Study Areas would be closed to leasing (non-discretionary). Should Congress release all or part of any of the Wilderness Study Areas, the lands would return to multiple-use management and may be generally available for leasing.

Oil and Natural Gas. At present, the Egan Resource Area is the only management unit in the Ely District where oil and gas leases are being issued. The leasing is conducted in accordance with the Egan RMP, Oil and Gas Leasing Amendment and Record of Decision (BLM 1992). Leasing in the Schell and Caliente Resource Areas has occurred in the past and valid leases are in effect, but issuance of leases was discontinued in those areas because of uncertainties regarding adequacy of the current MFPs to provide for oil and gas leasing. Application for permits to drill can be approved on leases outside of the Egan Resource Area, but no new leases can be issued.

In Nevada, the State of Nevada Division of Minerals has a Memorandum of Understanding with the BLM for the regulation of oil and gas activities. The BLM conducts the inspection of well sites on state and fee lands, and both agencies require operators to file the BLM forms pursuant to conducting oil and gas exploration and production activities. In addition, when drilling on federal lands, drilling permit applications must be submitted to both the BLM and Nevada Division of Minerals.

Geophysical operations both on and off an oil and gas lease are reviewed by the federal surface management agency, which can include the BLM, Bureau of Reclamation, or U.S. Forest Service, as

appropriate. Prior to earth disturbing activities, the operator is required to file a notice of intent to conduct oil and gas geophysical exploration operations. Upon completion of operations, including any required reclamation, the operator is required to file a Notice of Completion. If the terms and conditions have been met, the operator is released from further action. Consent to release the bond or termination of liability is not granted until the terms and conditions have been met.

Permitting of oil and gas wells are governed by procedures set forth by the Onshore Oil and Gas Order No. 1, "Approval of Operations on Onshore Federal and Indian Oil and Gas Lease," issued under 43 Code of Federal Regulations 3164 (BLM 1983). Operations Order No. 1 lists the following as pertinent points to be followed by the lessee or operator: 1) notice of staking; 2) filing of permit application, which includes a multi-point surface use and operations plan; 3) approval of subsequent operations; 4) well abandonment/conversion to water well; 5) responsibilities on privately owned surface; and 6) reports and activities required after well completion. Other resources are protected from oil and gas activities through the use of lease stipulations that are attached to the lease.

Geophysical surveys and well permit applications are subject to varying degrees of NEPA analysis. Geophysical exploration and single exploratory wells may be given a categorical exclusion from formal impact analysis, whereas the impacts of multiple-well developments or intensive seismic surveys can be subjected to higher levels of impact analysis such as environmental assessments or EISs.

Geothermal Energy. For geothermal drilling in Nevada, as in oil and gas drilling, permit applications must be filed with both the BLM and Nevada Division of Minerals. In addition to drilling permits, geothermal operators must obtain a water well permit from the Nevada Division of Water Resources. A permit also must be obtained from the Nevada Division of Environmental Protection for the injection or surface disposal of geothermal fluids.

Geothermal exploration can include geophysical surveys, drilling temperature gradient wells, drilling holes used for explosive charges for seismic exploration, core drilling or any other drilling method (provided the well is not used for geothermal resource production), airborne exploration, off-road vehicular travel, road and trail construction, and rehabilitation. Exploration operations do not include the direct testing of geothermal resources or the production or utilization of geothermal resources. Production operations include production well drilling; direct testing of the geothermal resources; chemical sampling of the geothermal resource; road construction and improvement; production; maintenance of production facilities; waste disposal, construction camps; construction of electric transmission lines; and plant construction, development, and expansion. All the above-described activities are subject to impact analysis under NEPA. As in oil and gas operations, some activities (e.g., geophysical surveys) may not require a formal impact analysis. However, exploration wells and production developments may require impact assessment through an environmental assessment or EIS. Geothermal leases also can have attached stipulations that are used to protect other resources.

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Locatable Minerals

Private individuals and corporations can acquire locatable minerals by staking mining claims. These mining claims are recorded in the local county courthouse and with the BLM. Management of locatable minerals by the BLM consists mainly of managing surface disturbances associated with the mining of the minerals. Surface disturbances can consist of pits, shafts and adits, leach pads, waste rock piles, tailings, and other disturbance of surface soils and vegetation to accommodate the infrastructure needed to support the mining.

Locatable mineral exploration and development are regulated under 43 Code of Federal Regulations 3809 (as amended) for public lands. These regulations provide for mineral activities on public lands while preventing undue and unnecessary degradation. The regulations also provide for reclamation of disturbed areas and coordination with state agencies. The amended 3809 regulations are effective at this time, and include substantial changes to the development of hard rock minerals. Under current regulations, activities under a notice are limited to an exploration operation less than 5 acres. A notice is not a federal action that requires compliance with NEPA, so no environmental documentation is prepared. BLM does review notices to ensure that no unnecessary or undue degradation would occur. A financial guarantee is required to reclaim 100 percent of the disturbance for all notices.

All other mining operations, except casual use, are required to file a plan of operations regardless of the number of acres disturbed. A plan also is required for all exploration activities that disturb over 5 acres, bulk sampling which would remove 1,000 tons or more of presumed ore for testing, or for any surface-disturbing operations greater than casual use in certain Special Management Areas such as ACECs. The approval of plans of operation is a federal action that requires NEPA compliance. Mining claim use and occupancy under 43 Code of Federal Regulations 3715 also requires NEPA compliance. A bond is required for any surface disturbance related to mining to reclaim 100 percent of the disturbance.

Locatable mineral exploration and development for Wilderness Study Areas are regulated under 43 Code of Federal Regulations 3802. Guidelines in the Wilderness Interim Management Plan would be followed for claims and operations within Wilderness Study Areas and Instant Study Areas. The Wilderness Interim Management Plan states that locatable mineral development and exploration activities within Wilderness Study Areas can occur in accordance with the mining laws, but are currently limited to those actions that do not require reclamation. This policy restriction effectively closes Wilderness Study Areas to mineral location. However, should the Wilderness Interim Management Plan be revised, or if Congress takes action to remove some areas from Wilderness Study Area status, some of these areas eventually could become available for mineral location during the life of this RMP.

Saleable Minerals. Saleable mineral exploration and development is regulated under 43 Code of Federal Regulations 3600. The disposal of saleable minerals is accomplished through competitive and negotiable sales contracts, free use permits, and sales in community pits. Inspections of saleable minerals operations is conducted in accordance with BLM policy contained in BLM Manual Section 3600, and as outlined in BLM Instruction Memorandum No. 99-021. The goals of the saleable mineral inspection program are: 1) an accurate accounting of materials removed; 2) proper compensation to the federal government; 3) protection of the environment, public health, and safety; and 4) identification and resolution of trespass.

All Wilderness Study Areas would be closed to saleable mineral disposal until Congress makes a decision regarding designation of these areas as wilderness. Areas not designated as wilderness could become available for saleable mineral disposal during the life of the RMP.

3.19 Watershed Management

3.19.1 Existing Conditions

The Ely District encompasses all or portions of 61 hydrologic subbasins or watersheds (watershed management units). Subbasins, as defined by the U.S. Geological Survey, are intermediate-sized drainage areas within the widely accepted hierarchical system of hydrologic units. Broad basins, or valleys, and discrete mountain ranges, whose ridges form the boundaries between the watersheds, characterize the District watersheds (see **Map 3.19-1**). District subbasins range from approximately 9,000 to approximately 767,000 acres in size. See **Table 3.19-1** for the acreage of watershed management units within the Ely District.

Table 3.19-1
Hydrologic Watershed Management Units within the Ely District¹

Name	Number	Public Land Area (acres)	Name	Number	Public Land Area (acres)
Antelope Valley	119	199,300	Newark	121	483,000
Beaver Dam Wash	215	122,600	North Antelope	7	44,300
Big Sand Springs Valley	164	127,500	North Little Smoky Valley	143	56,000
Butte	9	420,100	North Spring Valley	120A	118,800
Cave Valley	181	223,400	Panaca Valley	210	201,500
Central Little Smoky Valley	122	131,100	Park Range	175	8,700
Clover Creek North	212N	82,600	Patterson Wash	187	257,300
Clover Creek South	212S	144,300	Railroad Valley	156	287,000
Coal Valley	188	293,100	Rose Valley	202	29,100
Coyote Springs	228	24,600	Ruby Valley	6	81,800
Deep Creek	118	87,100	Sand Hollow Wash	222	48,100
Delamar Valley	211	229,500	Sand Spring Valley	204	327,000
Dry Lake Valley	183	571,400	Smith Valley	131	34,100
Dry Valley	207	71,200	Snake Valley North	125	140,300
Duck Creek Basin	128	22,700	Snake Valley South	148	120,700
Duck Water	154	186,300	South Little Smoky Valley	176	25,400
Eagle Valley	206	13,600	South Spring Valley	120A	294,800
Egan Basin	123	42,500	South Steptoe	161	171,500
Emmigrant	220	15,900	Spring Valley	120B	384,600
Escalante Desert	208	66,800	Spring Valley Southeast	184E	91,400
Fox-gap Mountain	186	52,300	Spring Valley Southwest	184W	84,600
Garden Valley	185	210,700	Steptoe A	8A	45,100
Gleason Creek	136	40,900	Steptoe B	8B	260,500
Hamlin Valley	180	268,400	Steptoe C	8C	189,000
Huntington	4	94,700	Tikaboo Valley	213	245,100
Jakes Valley	129	198,500	Toquop Wash	230	185,200
Kane Spring Wash	217	158,800	Tule Desert	218	121,900
Lake Valley	182	339,500	White River Central	160B	645,300
Long Valley	117	402,900	White River North	160A	205,300
Meadow Valley Wash North	214A	229,600	White River South	160C	767,000
Meadow Valley Wash South	214B	322,900	TOTAL		11,349,200

¹Based on 5th level hydrologic unit subdivisions.

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There are two main types of watersheds. One is the traditional Great Basin type of interior draining watershed that resembles an irregularly shaped bowl with the boundaries occurring at the highest portion (the rim) of the bowl. This type has a closed-drainage system that coalesces to a playa or old lake plain at the center. The other type is the externally draining watershed, which is traditional in shape but occurs in a desert climate. The network of stream channels begin as generally dry ephemeral stream channels high in the watershed and continue downslope joining other channels to form larger channels. These may join small perennial waters in some watersheds. These are desert areas where the precipitation infiltrates locally and mainly supports the on site vegetation. Most channels flow infrequently for brief periods of time during short intense precipitation events. Perennial waters exist only as outflow from springs or groups of springs. Subsurface water movement also occurs along many drainage courses.

As indicated in Section 2.5.19, management of watersheds within the District also considers the size of watersheds, i.e., large versus small watersheds, as these relate to potential treatment decisions. The two groups tend to differ in their topographic setting and in their characteristic vegetation. The overall estimated distribution of vegetation types in relation to typical large and small watersheds within the District is summarized in **Table 3.19-2**.

3.19.2 Trends

While it is the general consensus of researchers and land management personnel that overall ecological health of watersheds within the Ely District has deteriorated over several decades, specific trends for watershed functional health (expressed in terms of vegetation and soil stability, aquatic communities, and water quality values) have not been established for individual watersheds. The Ely Field Office is implementing a major shift from allotment evaluation at the grazing allotment level to evaluation at the watershed (landscape) level. This change in management approach will help facilitate restoration and management of ecological systems at the landscape level. As discussed under Section 3.19.3, Current Management, the District is currently conducting analyses for nine watersheds. Appendix C describes the methods being used for this review. The results of these watershed studies will provide a basis for future monitoring and follow-up restoration actions.

3.19.3 Current Management

Watershed management refers to a comprehensive approach to land management focused at the landscape level, essentially the subbasin level. Multiple ownerships and jurisdictions within a single watershed require coordination of efforts, because ecological system components and ecological processes do not readily conform to political boundaries. Nevada contains over half (14) of the subbasins nationwide with more than 80 percent on BLM-administered land (U.S. Geological Survey 2003). Of these, one-third (5) are located within the Ely District. Therefore, BLM has greater management responsibilities and opportunities relative to restoration within these watersheds. In most cases, the other primary watershed stakeholders involved with restoration on the District are other federal agencies, such as the Humboldt-Toiyabe National Forest, Great Basin National Park, and National Wildlife Refuges.

Since 1972 and the passage of the Clean Water Act, federal agencies have been working to prevent degradation of high quality waters and sensitive aquatic ecological systems and to restore degraded water

Table 3.19-2
Vegetation Distribution Relative to Watershed Size

Watershed Size	Units	Pinyon Juniper	Aspen	High Elevation Conifer	Salt Desert Shrub	Sagebrush	Mountain Mahogany	Mojave Desert	Riparian/ Wetland	Non-native Seedlings ¹	Totals ¹
Large Watershed ²	percent ³	31.2	0.1	0.5	9.6	5.02	0.4	8.1	0.02	3.0	100
	acres ⁴	3,278,400	4,200	49,600	1,006,100	5,266,900	43,100	845,700	1,900	318,400	10,495,900
Small Watershed ²	percent ³	35.0	0.3	0.7	23.9	39.1	0.3	0.5	0.1	1.3	100
	acres ⁴	315,000	2,800	6,400	214,900	352,600	2,900	4,300	1,200	12,200	900,100
TOTALS	percent ³	31.5	0.1	0.5	10.7	49.4	0.4	7.5	0.03	2.9	
	acres ⁴	3,593,400	7,000	56,000	1,221,000	5,619,500	46,000	850,000	3,100	330,600	11,396,000

¹ Acreage of non-native seedlings is duplicative of acreage in other vegetation categories and is not included in the total column.

² Large watersheds comprise approximately 10.5 million acres or about 92 percent of the District. Small watersheds comprise approximately 900,000 acres or 7.9 percent of the District. The overall percentage of land in large and small watersheds was determined by Geographic Information System.

³ Percentages shown are the percent of either large or small watershed areas occupied by a given vegetation category.

⁴ The acres for each vegetation type were estimated from several sources of information (Table 2.4-1, Ecological Site Inventory, and REGAP data). It was attempted to keep the general number of acres and proportion between large and small watersheds consistent, yet have the total number of acres sum to the District-wide total of 11.4 million acres and proportions total 100 percent.

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resources. In 2000, federal agencies adopted a unified federal policy on watershed management as a framework for consistent and enhanced implementation of land management activities to meet their respective goals and mandates for watershed protection (U.S. Department of Agriculture et al. 2000). The adopted policy included standardization of the fifth-level classification of hydrologic units as the common unit for delineating, assessing, and classifying watersheds. Each agency is mandated to conduct and prioritize watershed analyses on a roughly 10-year cycle to guide the management of natural resources. Each watershed analysis is to determine existing and reference conditions in order to characterize the physical, biological, and chemical conditions and processes affecting water quality, aquatic resources, and overall watershed function.

Consistent with the unified federal policy for ensuring a watershed approach to resource management, Instruction Memorandum 2001-079 formally linked the watershed analysis process with the mandate to assess and evaluate rangeland health status (BLM 4180 Manual and 4180-1 rangeland health standards handbook, also 43 Code of Federal Regulations 4180). Implementation of this direction requires the assessment of resource conditions in relation to land health standards developed in concert with the local Resource Advisory Councils. Deviations from land health standards (see Chapter 2.0), also variously referred to as desired conditions, are identified, and factors are evaluated on the District according to a process generally described in Appendix C.

In the past, project proposals would have been developed and implemented based upon boundaries of livestock grazing allotments. The Ely RMP/EIS will implement a policy change that directs BLM to plan and implement decisions based on watershed boundaries.

In the future, watershed analyses will be performed to determine if rangeland health standards are being met within a watershed. This involves an analysis of uses of vegetation by livestock, wildlife and wild horses as appropriate. It also involves analysis of other uses within the watershed. These include such things as: mineral exploration and/or development; off-highway vehicle use; hunting; and rights-of-way and corridor designations. If rangeland health standards are being met, the restoration plan (a portion of the watershed analysis) will propose projects and resource uses designed to maintain the healthy condition of the watershed. If standards are not being met, the restoration plan will propose projects and resource uses designed to improve the condition of the watershed.

RMP Management Focus

The restoration and maintenance of healthy ecological systems within watersheds is a primary focus for the future management of the Ely District. Healthy ecological systems are geographically diverse and change over time. They are compatible with soil potential and are resilient to disturbance.

Resources and resource uses will be managed to restore or maintain ecological health. Certain resource management changes and active treatments may need to be implemented, in portions of watersheds, to accomplish this objective. Adaptive management will be pursued to avoid deteriorating conditions favoring invasive plants and catastrophic fires. Any projects will be implemented so as to result in a mosaic of vegetation within a watershed.

In the long term, natural disturbance (such as drought or fire) will occur and fewer treatments will be needed to maintain ecological health. The result will be a variety of vegetation phases within a watershed, which will provide diverse, healthy conditions for future generations.

There are 61 watershed units within the planning area. It is expected that completion of watershed analyses, including restoration plans with proposed projects, on the 30 high priority watersheds will take approximately 10 years. Completion of watershed analyses on the remaining 31 lower priority watersheds will take longer than 10 years as more and more effort will be needed to implement projects proposed on the earlier analyzed watersheds.

To date, District implementation of the unified federal policy and 4180 Manual direction has involved ongoing analysis of nine watersheds. Watershed analyses are in progress on the Antelope Valley, Clover Creek South, Gleason Creek, North Antelope, North Spring Valley, Smith Valley, South Steptoe, Spring Valley, and Steptoe A, with completion scheduled for 2006. Priorities for analysis are areas where soils inventories from the National Resources Conservation Service are available.

Ongoing watershed management on the District has substantial support from agricultural, conservation, cultural, environmental, and scientific interests through partnership with the Eastern Nevada Landscape Coalition. The Eastern Nevada Landscape Coalition is a non-profit, community-based organization formed in 2001 to facilitate the BLM Ely Field Office's implementation of the Great Basin Restoration Initiative. It is dedicated to the restoration of diverse, dynamic, and resilient landscapes in the Great Basin.

3.20 Fire Management

3.20.1 Existing Conditions

Fire is an integral part of the ecological process of the many plant communities in the Great Basin. Most of the vegetation types on the Great Basin portion of the District developed under a regime of intermittent fire and are adapted to the effects of fire in some way. Each vegetation type is characterized by a fire frequency that is generally inversely related to fire intensity. Grasslands characterized by fine fuels carry fires at a high frequency and burn rapidly with low intensity. In contrast to desert plant communities, the pinyon-juniper woodlands and upper montane forest types receive higher amounts of precipitation and have cooler mean temperatures. The cooler and wetter conditions at the higher elevations foster plant growth, which in turn can provide higher resistance to fire for long periods, allowing fuels to accumulate. Conditions that promote burning at the higher elevations tend to occur in episodes such as drought cycles, with long intervals between them and higher relative fire intensity when they do occur.

Fire has been a less important factor in the Mojave Desert vegetation communities where the native perennial vegetation is relatively resistant to fires. However, the spread of exotic annual species such as red brome has resulted in increased supplies of fine fuels and greater vulnerability to fire in the Mojave Desert ecological systems.

Within each vegetation type, fire behavior varies with many factors including topography and site productivity. Highly productive sites, such as north slopes, generally have greater biomass and, therefore, can carry fires better than poor sites characterized by less fuel. General fuel characteristics of broad vegetation zones on the Great Basin portion of the District and their typical fire behavior are summarized in Table 3.20-1. Flashy fuels, such as cured out annual bromes and steep brushy mountain slopes, have the highest potential rates of spread. In contrast, where crested wheatgrass is dominant, fuel hazards are extremely low, because it remains green though much of the fire season.

Table 3.20-1
General Fuel Characteristics of Broad Vegetation Types
on the Great Basin Portion of the Ely District

Vegetation	Current Fuel Descriptions	Typical (Current) Fire Behavior
Sagebrush dominated communities	Fuel volumes in all of the sagebrush communities vary substantially depending on site conditions and history.	Where grasses are present, fire spreads quickly, however; where fuel continuity is absent, winds are needed to spread. Burned areas generally are over 5,000 acres.
Salt desert shrub	Fuel loads generally are low.	Winds generally are needed to carry fire in sparsely vegetated areas. Natural barriers tend to inhibit fire sizes. Rapid spread generally requires wind.
Pinyon-juniper woodland	Sparse understory grasses due to high tree densities limit the ability to carry fire. High woody fuels, including highly flammable resin and pitch, are widespread.	Fires are either single-tree low intensity events or wind-driven high intensity events covering thousands of acres.
Ponderosa pine/mixed conifer- upper montane forests	High accumulations of down and dead woody fuels combined with high vertical and horizontal fuel continuity.	Variable behavior from low intensity ground fires to stand-replacing crown fires.
Mountain meadows/ herbaceous grasslands	Native grass distribution keeps fuel loads low except where annual bromes have become dominant.	When annual grasses are "cured," the rate of spread typically is extremely high, and flame lengths can be unsafe for initial attack. Fires often burn on an annual basis.

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Literature data regarding historic fire regimes for District vegetation types are summarized in **Table 3.20-2**. Historic fire regimes can be difficult to construct for many vegetation types, and historic return intervals derived for a particular site within a vegetation type may not be representative of other sites in similar vegetation. Tree ring data have been used extensively as a means of reading the fire history of long-lived trees. Shrubs and non-woody plants that are wholly consumed by fire record little or no historic events. Historic fire sizes are potentially the most difficult to ascertain without extensive sampling of trees.

Table 3.20-2
Historic Fire Regimes of Vegetation Communities
on the Great Basin Portion of the Ely District

Vegetation Community	Historic Fire Return Interval (years)	Comments
Wyoming big sagebrush	25 to 100	Fire frequency was closer to 100 years where shrubs were small in stature with sparse grasses due to low site productivity.
Basin big sagebrush	30 to 70	—
Mountain big sagebrush	11 to 40	—
Black sagebrush	100 to 200	—
Salt desert shrub	40 (mean)	Fire interval highly variable due to soils that can range from wet to extremely droughty.
Pinyon-juniper woodland	30 to 300	Understory fires burned more frequently.
Mountain mahogany	13 to 22	—
Mixed conifer-upper montane	Variable	Long intervals in bristlecone pine (300 plus years), subalpine fir (90- to 350-year intervals), Engelmann spruce (150 plus years), limber pine (50- to 200-year intervals). Shorter intervals in ponderosa pine (20- to 50-year intervals), white fir (6- to 20-year intervals), and aspen (10- to 40-year intervals).
Mountain meadows	Less than 20	—
Riparian	No data	Riparian areas have characteristics that reduce the frequency and severity of fire relative to their surrounding uplands.

Source: Arno and Wilson 1986; Bradley et al. 1992; Hann et al. 2003; Miller 1998; Welch and Criddle 2003; BLM 2000c; and BLM unpublished data.

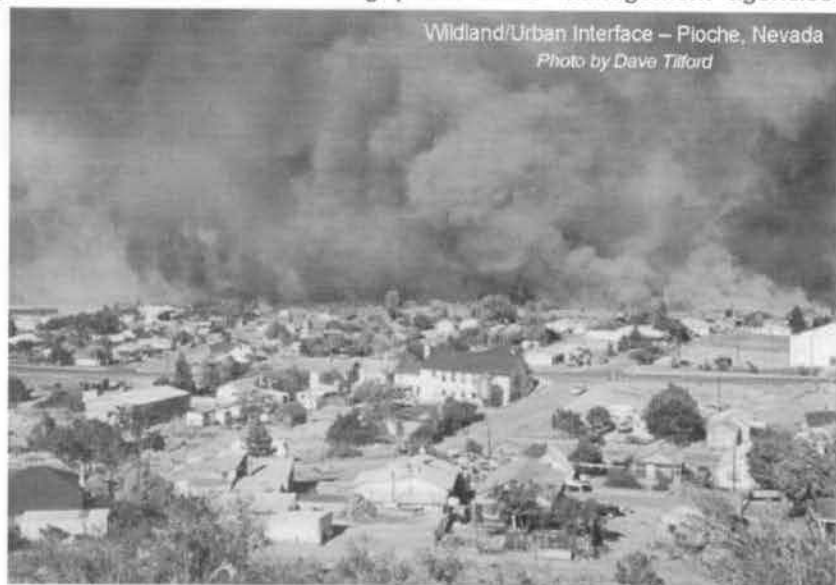
Fire regimes in the Intermountain West have been altered greatly by the introduction of the nonnative annual bromes such as cheatgrass, historic livestock grazing, and nearly 100 years of fire suppression. Livestock grazing that decreases perennial grass cover and height also reduces the availability of fine fuels to carry fires when ignitions occur. Historic livestock grazing has combined with other factors, such as fire suppression, to result in longer fire-free intervals and increased fuel accumulations in higher elevation sagebrush communities. This situation, in turn, leads to increased competition from pinyon pine and juniper seedlings and increased likelihood of intense fires that may eliminate the sagebrush species. At lower elevations, the reduction in perennial grasses and forbs in the sagebrush understory has commonly lead to expansion of cheatgrass and other invasive annual weeds or to dense stands of sagebrush with little or no herbaceous understory. The latter are prone to intense fires that effectively remove the sagebrush and set the stage for cheatgrass proliferation.

Fuel conditions across the Intermountain West have become a concern, especially to communities that adjoin undeveloped landscapes, commonly referred to as the wildland-urban interface. In these areas, high fuel loads can create hazards that combine with a high risk of ignition by humans and high values of homes, ranches, and other infrastructure. Although no structures were lost, the town of Pioche experienced a wildfire in the wildland-urban interface in the spring of 2003.

3.20.2 Trends

The Ely Field Office cooperates extensively with other wildland firefighting agencies and units. Due to its central location in eastern Nevada, Ely is a major center for firefighting logistics and operations. Memoranda of Understanding between the Ely Field Office and surrounding public lands management agencies (e.g., Humboldt-Toiyabe National Forest, BLM Elko Field Office) have been established and identify responsible parties for initial attack of fires.

Between 1986 and 2002, approximately 332,286 acres burned in 3,141 wildfires within the Ely District. This 16-year total represents less than 1 percent of the District and averages 20,767 acres and 196 managed wildfires per year over all vegetation types combined. Wildfires occurred in 11 of 18



vegetation communities during this period as shown in **Figure 3.20-1**. The 18 vegetation communities shown in **Figures 3.20-1** through **3.20-4** are based on a more refined land classification scheme than the vegetation classifications used elsewhere in this RMP/EIS. Greasewood and hopsage used in the fire analysis correspond to the salt desert shrub cover classes in **Table 3.5-2**.

As shown in **Figure 3.20-1**, the proportion of area burned in each of the broad vegetation types is roughly proportionate to their relative abundance on the District (**Table 3.5-2**). The exception is the grassland type where the high frequency of fire results in a disproportionately higher total number of fires and burned areas compared to its relative abundance on the overall landscape.

The predominance of acreage burned, and greatest frequency of fires in this period, were in the pinyon-juniper woodland, followed by grassland, blackbrush-creosote, and sagebrush. At least one wildfire in the pinyon-juniper woodland, sagebrush, and mountain shrub communities has occurred every year. In contrast, all wildfires in the greasewood, hopsage, playas, and barren communities amounted to less than 1 acre for all years combined.

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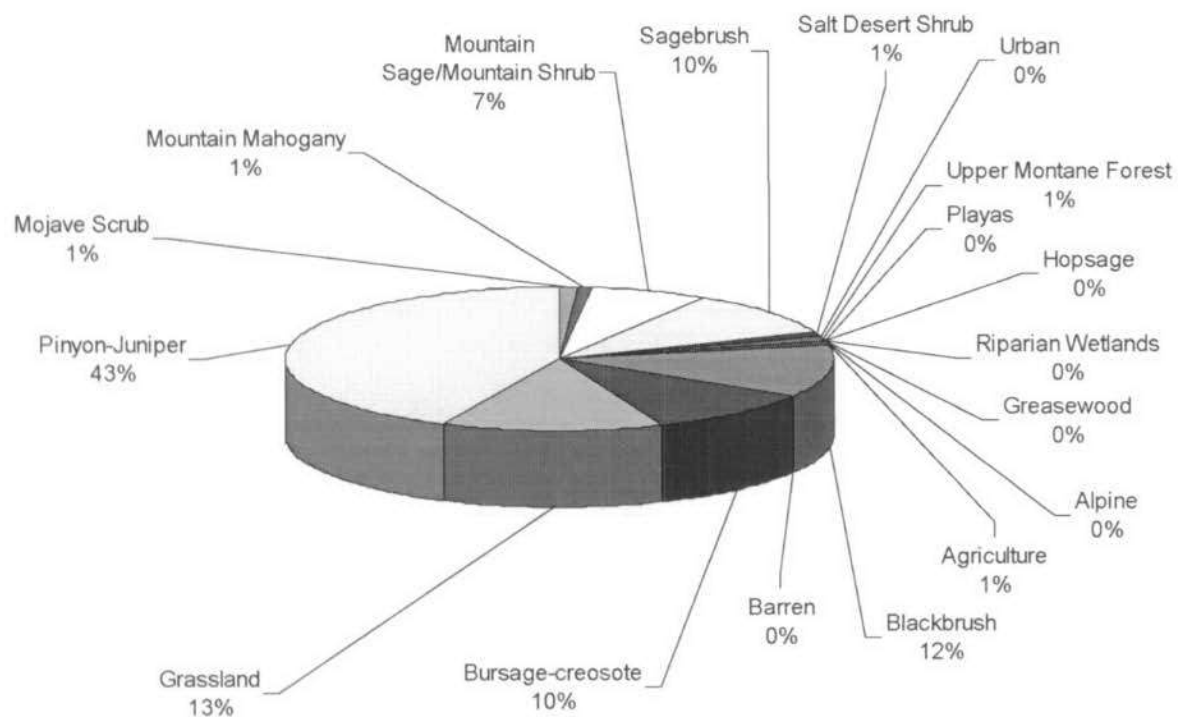


Figure 3.20-1. Proportion of Total Areas Burned in Wildfires by Vegetation Type (1986 to 2002)

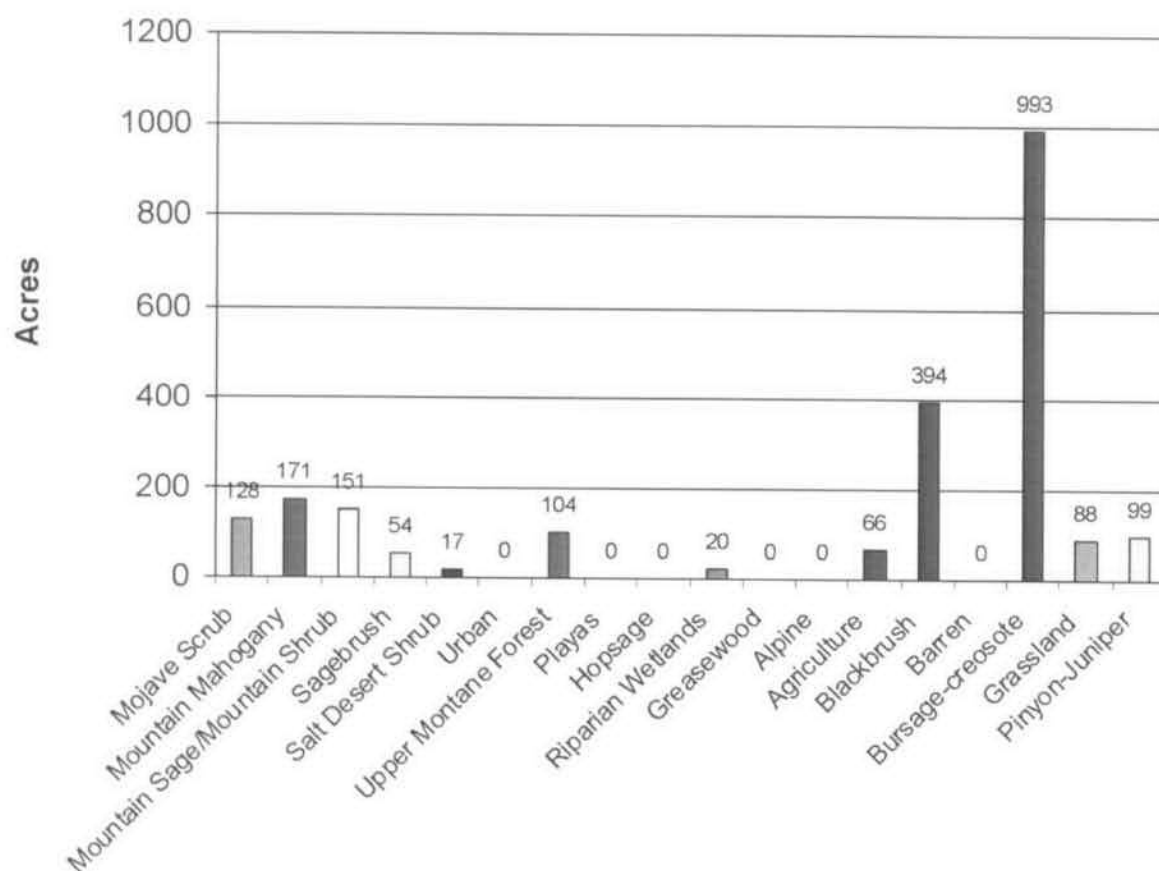


Figure 3.20-2. Mean Fire Size by Vegetation Type (1986 to 2002)

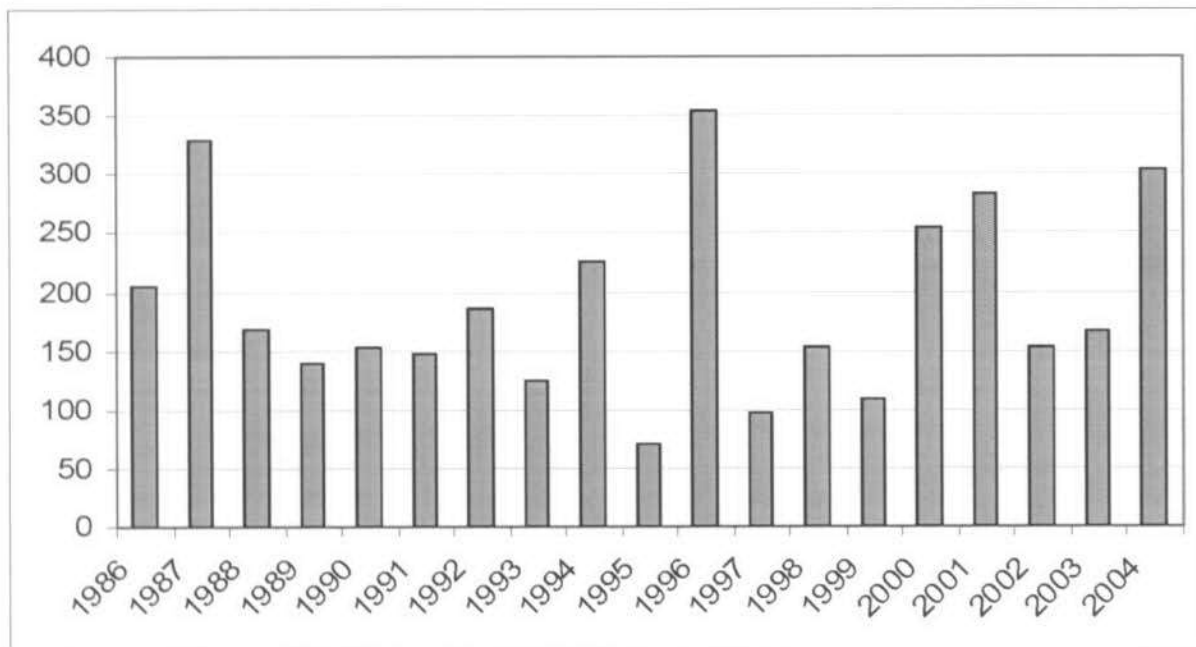


Figure 3.20-3. Number of Wildfires by Year (1986 to 2004)

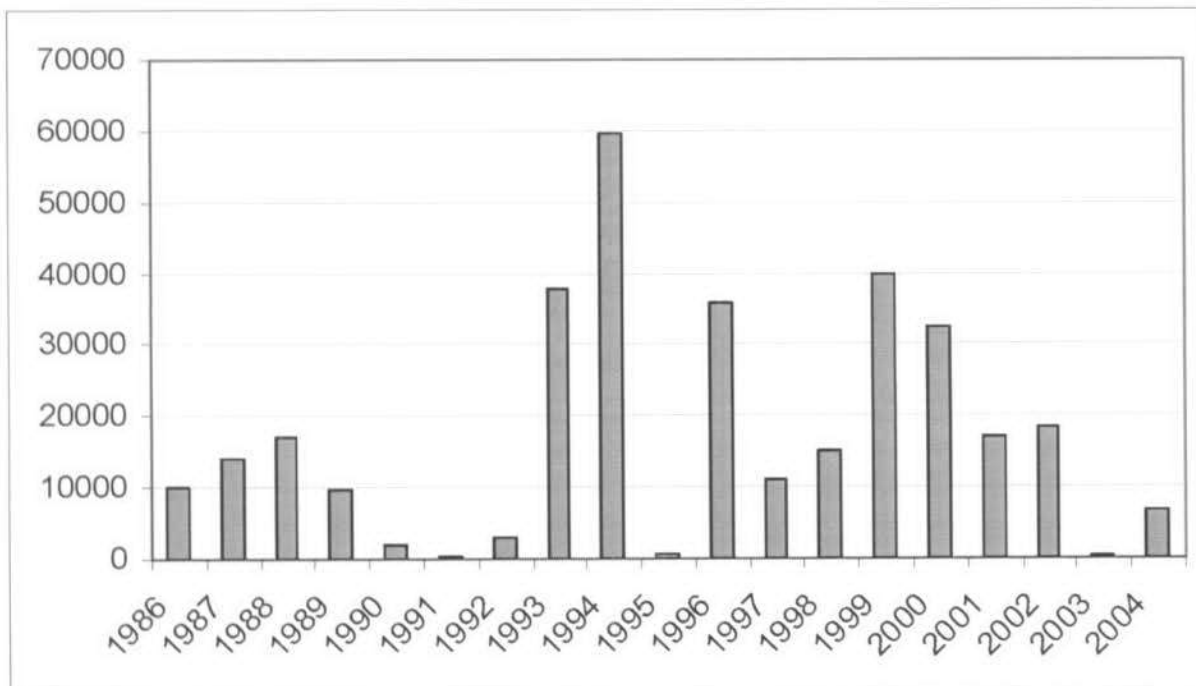


Figure 3.20-4. Total Acres Burned in Wildfires (1986 to 2004)

There have been four large peaks in the number of wildfires on the Ely District in the past 16 years (1987, 1996, 2000-2001, and 2004) (**Figure 3.20-3**). However, the greatest acreage burned in 1993, 1994, 1996, 1999, and 2000 when over 30,000 acres burned each year (**Figure 3.20-4**).

Where annual bromes are present, fire activity in the woodland and shrub communities facilitates the spread of these annual species, especially where perennial grass species are at low density or abundance. Hence, as wildfires occur and increase, the trend is toward increasing areas infested with annual bromes.

It is generally accepted that wildland fires in the Intermountain West have been increasing in size, intensity, suppression costs, and human related losses. This trend largely has been attributed to long-term fire suppression and the resulting accumulation of woody fuels, combined with alterations of the natural fire regime resulting from vegetation changes such as reductions in fine fuels due to livestock grazing. As the population of Nevada and surrounding areas increases, greater numbers of recreationists increase the risk of human caused ignitions. As the local communities in the wildland-urban interface areas grow, the potential for fire-related losses in these areas correspondingly increases.

3.20.3 Current Management

The Ely District currently manages planned and unplanned ignitions according to the Ely Managed Natural and Prescribed Fire Plan (BLM 2000c), which was developed with extensive public involvement. The Ely fire plan was prepared in response to the Federal Wildland Fire Management Policy and Program Review of 1995 and the threats posed by current fuel loading in the Intermountain West. Under current management, the short-term goal is to re-introduce fire using managed natural and prescribed fire. The long-term goal is for fire to be re-introduced to the District ecological systems and allowed to function as a natural process to the greatest extent possible.

Prescribed and wildland fire use must comply with applicable smoke management requirements as required by the Nevada Smoke Management Program, including obtaining annual permits, as well as daily evaluation of the fire conditions, to ensure applicable air quality regulations are not violated.

The Ely District is classified into general fire management categories based on current fuel types, distributions, and amounts. Seventy-five percent of the District generally is unsuitable for restoring natural fire at the present time and is classified as full suppression areas. Approximately 726,000 acres that are managed as full suppression occur within desert tortoise habitat in the southern portions of the District. Approximately 3.2 million acres currently are managed for fire use. Some areas have constraints, such as fire size, to conserve wildlife habitat features (**Table 2.5-20** and **Map 2.5-2**) (BLM 2000c).

In 2001, the Ely Field Office identified two high priority wildland-urban interface areas in need of fuels reduction on approximately 32,000 acres. One of these was conducted in cooperation with the Humboldt-Toiyabe National Forest. Wildland-urban interface areas on the District are listed in **Table 3.20-3**. In December 2003, Congress passed the Healthy Forests Restoration Act. This new law includes provisions for reducing destructive wildfires by allowing land managers to reduce hazardous fuels and restore wildfire-damaged landscapes.

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Table 3.20-3
Wildland-urban Interface Communities Within The Ely District

Community	County	Community	County
Baker	White Pine	Alamo	Lincoln
Cherry Creek	White Pine	Ash Springs	Lincoln
Cold Creek	White Pine	Caliente	Lincoln
Duckwater	White Pine	Caseltan Heights	Lincoln
Ely	White Pine	Eagle Valley	Lincoln
Lackawanna	White Pine	Hiko	Lincoln
Lund	White Pine	Mount Wilson Guest Ranch Community	Lincoln
McGill	White Pine	Panaca	Lincoln
Pleasant Valley	White Pine	Pioche	Lincoln
Preston	White Pine	Rachel	Lincoln
Ruth	White Pine	Ursine	Lincoln
Shoshone	White Pine		

Appropriate management response is applied to all wildland fire incidents occurring on the District. The Wildland Fire Management Policy (U.S. Department of the Interior et al. 2001), and more specifically, the Ely Managed Natural and Prescribed Fire Plan provides for a full range of responses and for the opportunity for all wildland fires to be managed for resource benefits. Appropriate management responses are based on land management objectives, relative risk, complexity, and defensibility of fire management boundaries and are continually updated as conditions change.

When selecting an appropriate management response, firefighter and public safety is always the highest concern. Minimum impact suppression tactics are used on all District wildfires in order to incur the least possible impact to the land while achieving fire management objectives. Minimum impact techniques might include using existing roads for fire breaks rather than building new lines or watching dying fires rather than disturbing them during "mop-up" operations. However, mechanized equipment also may be used on fire management actions and deemed as the minimum tool based on safety or values at risk.

Wildfires are evaluated for emergency stabilization and rehabilitation to reduce the adverse effects of wildfire on soils, vegetation, key/crucial wildlife habitat, property, water quality, and other resources.

Emergency stabilization refers to planned actions within 1 year of a wildland fire to:

- Stabilize and prevent unacceptable degradation to natural and cultural resources;
- Minimize threats to life or property resulting from the effects of fire; and
- Repair/replace/construct physical improvements necessary to prevent degradation of land and resources.
 - Priorities of emergency stabilization include:
 - Human life and safety; and
 - Property and unique or critical biological/cultural resources (based on an evaluation of relative values and stabilization costs).

Rehabilitation refers to actions taken within 3 years of the fire containment date to:

- Repair or improve lands unlikely to recover to a management approved condition; or
- Repair or replace minor facilities damaged by fire.
 - Priorities of rehabilitation include:
 - The repair or improvement of lands damaged directly by a wildland fire; and
 - The rehabilitation or establishment of healthy, stable ecological systems in the burned area (based on an evaluation of relative values and stabilization costs).

Restoration refers to the continuation of rehabilitation beyond the initial 3 years of rehabilitation funding or the repair or replacement of major facilities damaged by fire, including:

- Replacement of major infrastructure (visitor center, residences, administration offices, work centers) burned in the fire; and
- Watershed restoration.

Emergency stabilization and rehabilitation may involve grazing closures and horse gathering in revegetated areas, fence repair or replacement, various forms of seeding including site preparation and planting, installation of erosion control structures, and road repairs.

3.21 Noxious and Invasive Weed Management**3.21.1 Existing Conditions**

Invasive and noxious plant species are common impediments to management objectives within the Great Basin. Invasive species are alien (nonnative) species whose introduction into an environment where they did not evolve does or is likely to cause economic or environmental harm or harm to human health. Noxious species are those species designated by a federal, state, or county government as injurious to public health, agriculture, recreation, wildlife, or property (Sheley, Petroff, and Borman 1999). Noxious weeds designated by the State of Nevada and known to occur on the Ely District are listed in **Table 3.21-1**.

Currently, 6.3 million acres, or approximately half of the District, have been inventoried at least once for noxious weeds. Over 168,000 acres of noxious weed infestations have been recorded. Noxious weeds on the District tend to be associated with frequently disturbed areas such as roads, campgrounds, airstrips, rodeo grounds, and heavily used areas around towns and communities. For example, notable infestations of Dalmatian toadflax and spotted knapweed are located around the community of Pioche. Disturbed riparian areas appear to be particularly susceptible. However, the overall distribution of noxious weeds on the District does not suggest that, with the exception of roads and riparian areas, some habitats are more susceptible than others.

The most abundant noxious weed species is Russian knapweed, which accounts for two-thirds of the known infestations on the District. Approximately 44 percent of noxious weeds inventoried along roads have been attributed to spotted knapweed. Of the noxious weed species presently known on the District, the highest concerns are posed by tall whitetop, tamarisk, dalmatian toadflax, and spotted knapweed, due to their abundance and ability to spread rapidly.

Sixteen species of invasive plants known to occur on the Ely District are listed in **Table 3.21-2**. The annual bromes, specifically cheatgrass and red brome, are of particular concern because of their expanding distribution and adverse effects to native ecological systems. The invasive species filaree long ago became naturalized covering millions of acres in the Mojave Desert and has become culturally acceptable because it provides forage for livestock and wildlife. The remainder of the invasive species generally are restricted to disturbed areas.

Cheatgrass and halogeton are the most prevalent invasive species on the District. They are most prolific in the lower elevations from the woodland and shrub communities to the hot desert. Cheatgrass and other annual bromes occur in the understory of one-third of the vegetation types within the District. The blackbrush, salt desert, Wyoming and black sagebrush shrub communities are most susceptible to cheatgrass expansion. Halogeton is a common invader into the salt desert, winterfat, and black sagebrush shrub communities.

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Table 3.21-1
Nevada Noxious Weeds Known to Occur on the Ely District

Common Name	Scientific Name
Black henbane	<i>Hyoscyamus niger</i>
Canada thistle	<i>Cirsium arvense</i>
Dalmatian toadflax	<i>Linaria dalmatica</i>
Diffuse knapweed	<i>Centaurea diffusa</i>
Hoary cress (whitetop)	<i>Cardaria draba</i>
Leafy spurge	<i>Euphorbia esula</i>
Musk thistle	<i>Carduus nutans</i>
Poison hemlock	<i>Conium maculatum</i>
Puncture vine	<i>Tribulus terrestris</i>
Russian knapweed	<i>Acroptilon repens</i>
Tamarisk (salt cedar)	<i>Tamarix ramosissima</i>
Scotch thistle	<i>Onopordum acanthium</i>
Spotted knapweed	<i>Centaurea masculosa</i>
Squarrose knapweed	<i>Centaurea virgata</i> Lam. var. <i>squarrose</i>
Tall whitetop (perennial pepperweed)	<i>Lepidium latifolium</i>
Water hemlock	<i>Cicuta maculata</i>

Table 3.21-2
Ely District Invasive Species

Common Name	Scientific Name
Cheatgrass	<i>Bromus tectorum</i>
Red brome	<i>Bromus rubens</i>
Tumble mustard	<i>Sysimbrium altissimum</i>
Kochia	<i>Kochia scoparia</i>
Russian thistle	<i>Salsola kali</i>
Halogeton	<i>Halogeton glomeratus</i>
Bull thistle	<i>Cirsium vulgare</i>
Annual foxtail	<i>Hordeum jubatum</i>
Wild licorice	<i>Glycyrrhiza lepidota</i>
Moth mullein	<i>Verbascum blattaria</i>
Common mullein	<i>Verbascum thapsus</i>
Common cocklebur	<i>Xanthium spinosum</i>
Filaree/cranesbill	<i>Erodium cicutarium</i>
Sahara mustard	<i>Brassica tournefortii</i>
Elongated mustard	<i>Brassica elongate</i>
Horehound	<i>Marrubium vulgare</i>
Burr buttercup	<i>Ranunculatus testieclatus</i>

3.21.2 Trends

Similar to other public lands in the west, the Ely District has experienced an expansion of several species of noxious and invasive weeds in the last two decades. These expansions have involved previously established species as well as increasing numbers of new species. These plants dominate localized native plant communities and compete for water and nutrients, ultimately displacing native species. This displacement has altered fire regimes, diminished forage for animals, and decreased productivity of the land.

The current trend for noxious weeds is upward in the region as a whole, although current roadside-based efforts to control these species may be slowing the trend locally. It is expected that additional noxious species will continue to expand in the District. For example, camelthorn and Malta starthistle presently are known to occur in neighboring Clark County but have not yet been recorded within the District.

Invasive weeds such as cheatgrass and other annual bromes from the Mediterranean region are widespread in the Intermountain West where they have been reported to extend over approximately 25 million acres of public land alone (BLM unpublished data). Large scale ecological system changes have been attributed to the monocultural conditions brought on by the rapid establishment of cheatgrass (Billings 1994). Annual bromes are prolific seeders that mature earlier than native species and form a continuous bed of highly flammable fine fuels at a time of year that fires did not historically burn. Cheatgrass evolved in hot dry environments with a frequent fire interval that fosters its proliferation. Its presence in western ecological systems has affected both the timing and the frequency of wildfires, which in turn have affected ecological system function.

3.21.3 Current Management

Contemporary, agency policy and management direction for preventing, detecting, and treating noxious and invasive species includes Executive Order 2399 (1999a), Instruction Memorandum 99-076 (1999b), and the BLM National Partners Against Weeds Action Plan (1996).

At the local level, the Ely Field Office has been managing noxious and invasive weeds as described and evaluated in the programmatic environmental assessment (BLM 2000e), landscape herbicide application environmental assessments (BLM 2001e,f,g,h), and the Ely Field Office policies stated in Instruction Memorandum NV-040-00-01 (BLM 1999c), Instruction Memorandum 99-076, and NV-040-9015-01 (BLM 1999d). The Ely Field Office uses the most current species lists developed by the Nevada Department of Agriculture.

The BLM adheres to the concept of integrated weed management. This refers to the use of a wide range of available tools and techniques and their combinations to meet weed objectives in each site-specific situation. Vegetation treatments, including those for noxious weeds that are conducted on public lands, currently are implemented under the principles and methodology in the 1991 Record of Decision and Final EIS for Vegetation Treatment on BLM Lands in Thirteen Western States (BLM 1991). Site-specific documentation is prepared for each vegetation treatment plan on the District.

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Treatments of noxious weeds have focused on cooperative efforts with White Pine, Lincoln, and Nye counties and Nevada Department of Transportation along roads and abandoned rights-of-way. Treatments have been almost entirely chemical from truck-mounted sprayers. Treatment of tamarisk also has been predominantly with herbicides in drainages such as Meadow Valley Wash. Effective treatment of infestations in disturbed riparian areas is frequently constrained by the need for corresponding treatment on adjoining private lands.

3.22 Special Designations

3.22.1 Existing Conditions

The following sections describe areas that have received special designations on the Ely District. These special designation areas are presented in Table 3.22-1 and on Map 3.22-1.

Table 3.22-1
Existing Special Designation Areas on the Ely District^{1,2}

ACECs		Archaeological Districts	
Beaver Dam Slope	36,900 acres	Panaca Summit	7,040 acres
Kane Springs	65,900 acres	Sunshine Locality	34,560 acres
Mormon Mesa	109,700 acres	White River Narrows	4,000 acres
Backcountry Byway		National Historic Trails	
Mount Wilson Backcountry Byway	65 miles	Pony Express	153 miles
Geologic Areas		California	15 miles
Cave Valley Cave	40 acres	Designated Wilderness	
Goshute Cave	120 acres	Big Rocks	12,900 acres
Leviathan Cave	1,000 acres	Clover Mountains	85,700 acres
Whipple Cave	80 acres	Delamar Mountains	111,000 acres
Rockhounding Areas		Far South Egans	36,300 acres
Gamet Fields	1,200 acres	Fortification Range	30,500 acres
Scenic Areas		Meadow Valley Range	122,000 acres
Blue Mass	950 acres	Mormon Mountains	146,000 acres
Mount Grafton/North Creek	16,100 acres	Mount Irish	28,300 acres
Kious Spring	40 acres	Mount Moriah	6,400 acres
Weaver Creek	640 acres	Parsnip Peak	43,500 acres
Natural Areas		South Pahroc Range	25,700 acres
Goshute Canyon	7,600 acres	Tunnel Spring	5,400 acres
Shoshone Ponds	1,200 acres	Weepah Spring	51,300 acres
Swamp Cedar	3,200 acres	White Rock Range	24,200 acres
Research Natural Areas		Worthington Mountains	30,600 acres
Heusser Bristlecone	480 acres	Wilderness Study Areas	
Pygmy Sage	160 acres	Antelope Range	540 acres
Historic Areas		Blue Eagle	14,300 acres
Bat Cave and Guano Mine	40 acres	Goshute Canyon	38,100 acres
Archaeological Sites		Marble Canyon	15,100 acres
Baker	80 acres	Mount Grafton	73,000 acres
Baker Creek	75 acres	Park Range	30,700 acres
Garrison	120 acres	Riordan's Well	36,200 acres
Mount Irish	640 acres	South Egan Range	93,600 acres
Rock Animal Corral	160 acres		
Snake Creek Indian Burial Cave	40 acres		
White River Petroglyphs	480 acres		

¹Note: The acreage presented is within the planning area. Special designation area acreage outside the planning area is not included.

²Note: Acreage figures are approximate and have been rounded.

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3.22.1.1 Areas of Critical Environmental Concern (ACECs)

Existing Conditions

Currently, there are three existing ACECs (Beaver Dam Slope, Kane Springs, and Mormon Mesa) in the District (see **Table 3.22-1**). The Beaver Dam Slope ACEC is located in southeastern Lincoln County, west of the Nevada/Arizona/Utah border (**Map 2.4-55, Map Q-2**). The area extends north from the Lincoln/Clark County line and northwest of the city of St. George, Utah. The Kane Springs ACEC is located in southwestern Lincoln County, west of the existing Mormon Mesa ACEC (**Map 2.4-55, Map Q-2**). The area extends north along U.S. Highway 93 towards Alamo from the Lincoln/Clark County border. The Mormon Mesa ACEC is located in south central Lincoln County, west of the existing Kane Springs ACEC, and east of the existing Beaver Dam Slope ACEC (**Map 2.4-55, Map Q-2**). The ACEC extends north from the Lincoln/Clark County line and is north of the communities of Mesquite and Moapa, Nevada, near the Mormon Mountain Range.

These ACECs consist of a total of 212,500 acres of critical desert tortoise habitat and are managed primarily for recovery of the species. They also have several relationships to existing rights including several highway and utility right-of-way corridors, several existing mining claims, oil and gas leases, and water filings/appropriations.

3.22.1.2 Backcountry Byways

Backcountry byways are roadways that have been designated by the BLM as providing access to aesthetic and scenic resources. These roads can range from narrow, graded roads with seasonal access to paved two-lane highways with year-round access. At present, there is one existing backcountry byway on the District (see **Table 3.22-1**).

The Mount Wilson Backcountry Byway begins on State Road 322 at Pioche, or off of U.S. Highway 93 at the Pony Springs Rest Area about 22 miles north of Pioche. This route consists primarily of gravel roads that wind through an ancient volcanic caldera now forested with pinyon and juniper trees at the lower elevations and with aspen, mountain mahogany, and ponderosa pine at higher elevations. Access is extremely limited during the winter and route signing is minimal.

3.22.1.3 Geologic Areas

Geologic areas are areas designated by the BLM as having unique or outstanding geologic importance that requires special attention and management to ensure preservation of these resources. At present, there are four existing geologic areas on the District (see **Table 3.22-1**). These geologic areas offer unique underground geological features and are highly regarded by cavers for their underground exploration and geological study opportunities.

3.22.1.4 Rockhounding Areas

At present, there is one existing rockhounding area on the District (see **Table 3.22-1**). Garnet Hill (Garnet Fields) is an internationally known site for collectors of garnet, a ruby red semi-precious gem found in rocky volcanic outcrops. Garnet Hill facilities include picnic sites with grills and a handicap accessible restroom.

3.22.1.5 Scenic Areas

National scenic areas are areas designated to provide for the conservation and protection of certain scenic, recreation, or pastoral values and to provide enhancement of those values. These areas can exhibit a number of unique features such as interesting land forms, lakes, or streams with attractive natural settings. At present, there are five existing scenic areas on the District (see **Table 3.22-1**).

3.22.1.6 Natural Areas

Natural areas are areas designated by the BLM that have outstanding scenic characteristics, natural characteristics, or scientific importance that require special management to preserve these characteristics in a natural condition. At present, there are three existing natural areas on the District (see **Table 3.22-1**).

3.22.1.7 Research Natural Areas

Research natural areas are areas set aside by Congress or a public or private agency to preserve and protect ecological communities, associations, phenomena, characteristics, or natural features or processes for scientific and educational purposes. The primary management objective is to protect ecological processes, conserve their biological diversity, and provide opportunities for observational activities associated with research and education. Research natural areas may consist of diverse vegetation communities, wildlife habitat, unique geological formations, cultural resource values, and other values identified by physiographic provinces established in state or agency natural resource planning documents. At present, there are two existing research natural areas on the District (see **Table 3.22-1**).

3.22.1.8 Historic Areas

Historic areas are areas designated by the BLM to preserve and protect sites exhibiting significant cultural resources. These areas typically contain evidence of American history. At present, there is one existing historic area on the District (see **Table 3.22-1**).

3.22.1.9 Archaeological Sites

Archaeological sites are areas designated by the BLM to preserve and protect sites exhibiting significant cultural resources. These areas typically contain evidence of prehistoric resources. At present, there are seven existing archaeological sites on the District (see **Table 3.22-1**).

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3.22.1.10 Archaeological Districts

An archaeological district is an area that contains a number of archaeological resources that are related and are considered as a whole rather than as a number of individual sites.

At present, there are three existing archaeological districts on the District (see **Table 3.22-1**). The White River Narrows Archeological District contains numerous rock art sites that include both pictographs and petroglyphs. The Panaca Summit Archaeological District contains 74 prehistoric sites, which include base camps, short-term campsites, activity loci, and isolates. The Sunshine Locality National Register District consists of more than 90 sites representing a subsistence pattern known as the Western Pluvial Lakes Tradition. The sites primarily are fragile surface deposits composed almost entirely of lithic tools and lithic debris.

3.22.1.11 National Historic Trails

National historic trails are designated by Congress for routes that follow as closely as possible to original trails or routes of travel of national historic significance, and that meet a specific set of criteria. The purpose is to identify and protect historic routes and their associated artifacts. At present, there are two existing National Historic Trails on the District (see **Table 3.22-1**).

3.22.1.12 Designated Wilderness

A designated wilderness area is an area designated by Congress and defined by the Wilderness Act of 1964 as a place that "(1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value."

At present, the Ely district manages approximately 6,400 acres of the 82,000-acre Mount Moriah Wilderness. Mount Moriah is the Nevada BLM's first designated wilderness and is managed in accordance with the Wilderness Act of 1964, the Nevada Wilderness Protection act of 1989, and the 1995 Wilderness Management Plan for the Mount Moriah Wilderness. The Ely District also manages approximately 754,600 additional acres of designated wilderness as created by the Lincoln County Conservation, Recreation, and Development Act of 2004. These areas have high-quality opportunities for primitive and unconfined recreation and solitude due to the variety of landforms and low level of human activity. Special features include prehistoric and historic resources, caves, bristlecone pines and riparian vegetation (see **Table 3.22-1**). The existing designated wilderness areas are managed in accordance with BLM's Wilderness Management Regulations.

3.22.1.13 Wilderness Study Areas

A Wilderness Study Area is an area identified by the BLM as having wilderness characteristics, thus making it worthy of consideration by Congress for wilderness designation. Wilderness Study Areas are managed to

prevent impairment of the area's suitability for designation by Congress as designated wilderness under the Interim Management Policy for Lands under Wilderness Review (H-8550-1). The BLM no longer identifies Wilderness Study Areas through land use planning but continues to manage existing designated wilderness and Wilderness Study Areas as such. The BLM currently manages the wilderness values in eight Wilderness Study Areas within the District.

3.22.2 Trends

BLM special designations commonly result from the recognition and need for protection of the unique natural and cultural resource qualities of certain areas. These unique qualities often are identified from the results of institutional research and public and external agency input. In general, input concerning potential special designation areas is received continuously by BLM. The periodic RMP revision process provides the opportunity to systematically evaluate a variety of natural and cultural features for special designation. As indicated in the discussion of potential ACEC designation, the public has been involved in nominating potential sites, and the BLM has furthered screened these nominations to a smaller number of sites that have been selected for further analysis in the EIS. The RMP Record of Decision will provide the framework for the establishing the boundaries and management prescriptions for any new special designation areas.

3.22.3 Current Management

3.22.3.1 Areas of Critical Environmental Concern

The ACEC designation is an administrative designation used by the BLM that is accomplished through the land use planning process. It is unique to the BLM in that no other agency uses this form of designation. The Federal Land Policy and Management Act states that the BLM will give priority to the designation and protection of ACECs in the development and revision of land use plans.

BLM regulations (43 Code of Federal Regulations part 1610) define an ACEC as an area "within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards." Private lands and lands administered by other agencies are not included in the boundaries of ACECs. ACECs differ from other special management designations (e.g., Wilderness Study Areas) in that designation by itself does not automatically prohibit or restrict other uses. In order to be designated, special management beyond standard provisions established by the plan must be required to protect the relevant and important values. Further information about these criteria is presented in Appendix Q.

3.22.3.2 Other Designations

The BLM may decide to protect specific areas either alone, or in conjunction with other agencies. Examples of BLM designations authorized under the Federal Land Policy and Management Act include backcountry byways (BLM Handbook H-8357-1), archaeological and historic sites, and natural areas.

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National historic trails are authorized under the National Trails System Act, administered by the National Park Service. However, the BLM has responsibility for managing the land uses and activities occurring on or near these trails where they cross BLM public lands.

The Classification and Multiple Use Act of September 19, 1964 (78 STAT 986, 43 USC 1411) authorizes the Secretary of Interior to review the public lands to determine which lands shall be classified as suitable for disposal and which lands are considered to contain such values as to make them more suitable for retention in federal ownership.

A public land order is one type of withdrawal order to segregate land for a specific reason. A withdrawal does not become effective until one of the following are published in the Federal Register:

1. Public land Orders (approved by the Secretary, Department Secretaries, and Assistant Secretaries).
2. Executive Orders, early withdrawals were done by this, often handwritten.
3. Presidential Proclamations: these are few and far between and new monuments.
4. Secretarial Orders, similar to Executive Orders.
5. Geologic Land Office Orders, pre-BLM.
6. Bureau of Land Management Orders: (general, Administrative Order, Director).
7. Act of Congress or Public Law (Military withdrawals over 5,000 acres).

3.23 Economic Conditions**3.23.1 Employment and Unemployment**

The BLM does not have direct management responsibility for economic and social conditions. However, the predominance of public lands in the District gives rise to interest and concern over the social and economic (socioeconomic) conditions arising from the interactions between people, their activities, and associated public use and management of public lands. As a result, the social structure of the region also must be recognized during the planning process, and social impacts associated with the RMP alternatives assessed as part of the NEPA review. Information related to social conditions is interspersed within the information presented throughout this section.

The Ely District includes land in three of Nevada's 17 counties: Lincoln, Nye, and White Pine. All of Lincoln and White Pine counties, but only the eastern portion of Nye County, including the Duckwater Shoshone Indian Reservation, are within the District. The portion of Nye County within the District is rural and isolated by distance from the major communities and government service centers in the county. Consequently, important economic and social linkages connect the area to Ely and other nearby areas of White Pine County.

Communities and population centers in the District include two incorporated municipalities: Ely, the county seat of White Pine County, and Caliente in Lincoln County. Unincorporated communities in the District include McGill, Ruth, Lund, Baker, Preston, and Cherry Creek in White Pine County; Panaca, Ash Springs, Alamo, and Pioche in Lincoln County; and Duckwater and Carrant in Nye County. Pioche is the county seat of Lincoln County. Ely is the largest trade and service center in the District, followed by Caliente. Pioche, Panaca, and McGill; all support a limited range of essential consumer and community services. Three American Indian reservations located within the District also are population centers.

Lands administered by the BLM and other federal agencies comprise the majority of all lands in the three counties (98.3 percent in Lincoln, 92.7 percent in Nye, and 93.5 percent in White Pine counties). The statewide average is 85.3 percent. Privately owned lands and lands controlled by units of state and local government total about 1.3 million acres in the three counties, approximately 415,000 acres of that in Lincoln and White Pine counties. Most of the private and locally controlled land in Nye County is outside the District.

Additional concerns arise in the context of environmental justice considerations under Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. All or part of three federally recognized American Indian reservations are located within the District: the Duckwater Shoshone Reservation, the Ely Shoshone Colony, and the Goshute Shoshone Reservation. The latter straddles the Nevada-Utah state line, with two-thirds located in White Pine County and the remainder in Juab County, Utah.

The description of the socioeconomic environment for the District focuses on Lincoln and White Pine counties. This emphasis reflects the geospatial limitations inherent in the available data (i.e., data compiled

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and reported at the county level) and the limited population and economic activity of the Duckwater Census Civil Division. Data or qualitative descriptions are included for Nye County or the Duckwater Census Civil Division where appropriate to describe conditions in that portion of the District. Additional information regarding socioeconomic conditions in the Ely District is contained in a separate document Socioeconomic Profile, U.S. Bureau of Land Management, Ely District, Lincoln, White Pine, and Nye Counties, Nevada. Copies of that report are available through the Ely Field Office.

The economies of rural Nevada, including that of the District, historically have been relatively undiversified and dependent upon mineral or other natural resource development, agriculture, and government. That dependency subjects the local economy to expansion and contraction cycles tied to changes in one or more key sectors, and to the subsequent amplifications of those changes due to "multiplier" effects as the direct changes in business and consumer spending ripple through the economy. Economic data for White Pine and Lincoln counties indicate a net change of 2.63 jobs for each job gained or lost in gold mining, 1.67 net jobs per job in cattle ranching, 1.4 to 1.7 jobs per construction job, and 1.2 jobs per state government job. The corresponding multipliers for income are 2.18 for gold mining, 1.72 for cattle ranching, 1.27 to 1.60 for construction, and 1.10 for state government employment (Minnesota Implan Group 2001). Such volatility is apparent in the total employment trends for White Pine and Lincoln counties as illustrated in Figure 3.23-1 and underlies the population trends as discussed in Section 3.24, Social Conditions.

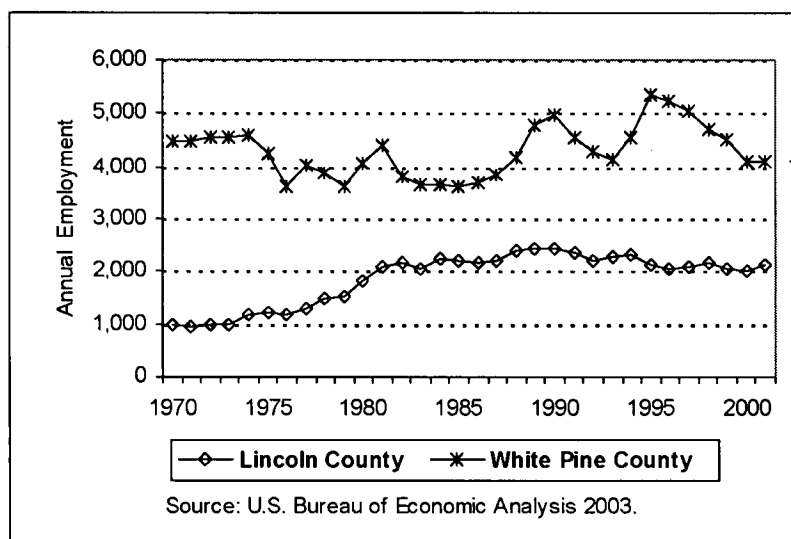


Figure 3.23-1. Total Employment in Lincoln and White Pine Counties 1970 to 2001

Total employment in Lincoln County numbered 996 jobs in 1970. Through the 1970s and 1980s, much local employment growth was tied to federal activities at the Nevada Test Site. The opening of the Caliente Youth Center helped boost total employment to a peak of 2,426 in 1989. Subsequent cutbacks at the Nevada Test Site initiated a period of contraction as the job and income losses rippled through the economy. Modest growth in retail trade, services, and construction has occurred in concert with recent population growth,

raising total employment to 2,125 in 2002. Total farm employment stood at 147 jobs in 2002. Employment growth between 1970 and 2002 averaged 2.4 percent per year.

Over time, White Pine County's economy has been larger and more diverse than that of Lincoln County, anchored by mining, manufacturing, services, and trade. In part, the latter resulted from Ely's location at the crossroads of regionally important highway travel routes and a railroad built to serve the area's mining industry. However, White Pine County has been unable to sustain long-term employment growth over the decades since 1970.

Beginning in the mid-1970s, the mining industry went through several expansion and contraction cycles. In the mid-1980s, local manufacturing also declined. Total employment fell from 4,597 in 1974 to 3,625 jobs in 1979, before climbing to 4,394 in 1981 and falling again to 3,597 in 1985. Mining in White Pine County had a resurgence in the 1990s when as many as eight major mining projects were operational. Peak production, in terms of value, occurred in 1998 when local mines produced more than 253,000 ounces of gold and 300,000 ounces of silver. Mining subsequently waned as depleted reserves and weak market conditions caused all but Placer Dome's Bald Mountain Mine, to cease operation. By 2002, mining employment had fallen to 176 jobs, the lowest level since the current employment reporting series began in 1969. The local mining industry experienced continued weakness through 2003, but was buoyed by the acquisition and subsequent reopening of the historic Robinson copper mine by Quadra, Ltd in 2004. The present mine plan anticipates a 10-year life-of-mine (Quadra Mining, Ltd. 2004).

Construction and opening of the Ely state prison in 1990 brought a new and stable source of jobs to White Pine County. Those jobs, along with increases in Federal government employment, were the primary factors underlying the increase in total government employment from 771 employees in 1988 to 1,434 jobs in 2002. Farm employment, including both proprietors and hired hands, totaled 177 in 2002. On average, employment in White Pine County declined by about 0.3 percent per year between 1970 and 2002.

Agriculture plays a historically important role in the contemporary settlement and subsequent economic, social, and political development of the state and region. However, in recent years, farm employment has been stagnant as private non-farm and government employment have grown rapidly. Between 1985 and 2002, more than 680,000 net new non-farm private jobs and 65,800 government jobs were created statewide, compared to a net loss of about 430 farm jobs. Statewide in 2002, non-farm private jobs accounted for 88.8 percent of all jobs, compared to 10.8 percent in government and 0.4 percent in farming.

In Lincoln County, farm employment increased slightly near the end of the 1980s. Since that time, it has declined steadily. In 2002, government accounted for 28 percent of all jobs in Lincoln County, compared to 7 percent in farming and 65 percent in non-farm private industries (see **Table 3.23-1**).

Both the number and share of farm and non-farm private jobs declined in White Pine County between 1985 and 2002. By 2002, non-farm private jobs accounted for 61 percent of all local jobs. During that same period, the number of government employees nearly doubled and the share of all jobs in the public sector increased to 35 percent.

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Table 3.23-1
Employment by Major Category for Year 2001

Industry	Lincoln County		White Pine County	
	Employment	Percent of Total	Employment	Percent of Total
Farm	147	7	177	4
Non-farm Private	1,381	65	2,499	61
Government	597	28	1,434	35
Total	2,125	100	4,110	100

Source: U.S. Bureau of Economic Analysis 2003.

In rural areas, changes in employment opportunities trigger multiple responses in the local labor market. In the short term, unemployment rises or falls in a countercyclical manner. Major layoffs and new openings also can trigger changes in local labor force participation and in- or out-migration contributing to changes in the region's resident population.

Statewide unemployment from 1995 to 2004 ranged between 4.1 and 5.5 percent. During the same period, workers in the District saw a much wider fluctuation in unemployment. In Lincoln County, unemployment climbed to 12.6 percent in 1996 following reductions in federal activity at the Nevada Test Site. Unemployment has since moderated, though it is consistently higher than statewide averages (see **Table 3.23-2**).

Table 3.23-2
Average Annual Unemployment Rates 1995 to 2004
(percent)

County and State	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Lincoln County	11.9	12.6	7.8	6.1	6.1	6.6	7.2	5.8	6.6	5.8
White Pine County	6.4	8.0	5.8	5.8	3.8	3.9	4.5	3.8	3.9	3.7
Nevada	5.4	5.4	4.1	4.5	4.4	4.1	5.3	5.5	5.2	4.1

Source: Nevada Department of Employment, Training, and Rehabilitation 2002 and 2005.

Economic migration has played an important role in White Pine County's labor market, triggered by a loss of about 1,300 mining jobs. As a result of these job losses, unemployment peaked at 8.0 percent in 1996 but has since declined to 3.7 percent in 2004 as residents moved from the area, secured other employment, or withdrew from the labor force. Workers entering and leaving the labor force in response to the relative availability of jobs provide another labor market adjustment mechanism. Labor force data published by the state indicate that gross labor force participation has declined by 20 to 25 percent in Lincoln and White Pine counties since 1995.

Commuting also plays an important role in the local economy (see **Table 3.23-3**). As reported in the 2000 census, 89.7 percent of employed Lincoln County residents also worked in the county. In White Pine

County, 92.4 percent of employed residents worked in the county. Clark County was the primary non-local place of work for residents of Lincoln County. Among White Pine County residents who were employed elsewhere, Elko and Eureka counties, and locations in Utah were the most common non-local places of work. Little cross-commuting occurs between Lincoln and White Pine counties.

Table 3.23-3
Place of Work of Local Resident Workers for Year 2000

County or State	Lincoln County		White Pine County	
	Workers	Percent of Total	Workers	Percent of Total
Lincoln County	1,303	89.7	6	0.2
Nye County	9	0.6	39	1.2
White Pine County	8	0.6	3,036	92.4
Clark County	113	7.8	35	1.1
Other Nevada	0	0.0	115	3.5
Not in Nevada	20	1.4	55	1.7
Total Workers	1,453	100.0	3,286	100.0

Source: U.S. Census Bureau 2003.

Work force commuting flows also involve workers who lived elsewhere and commuted to jobs in the District. In 2000, 21.4 percent of all workers employed in Lincoln County lived elsewhere. Only 6.2 percent of workers in White Pine County lived elsewhere. Clark County was the principal source of non-local workers employed in the two counties.

3.23.2 Economic Base

The gross county economic output, that is, the aggregate value of goods and services produced, provides another perspective on the relative size of the local economies. Estimates of the monetary value of output can be clustered into four major categories that highlight the composition of the local economies. Those categories are:

- Production or commodity based, such as livestock, minerals, and manufacturing;
- Trade, which includes the wholesale and retail sale of products;
- Services, which involves utilities, shipment of commodities, and business and personal services, such as lodging, guided hunting, and health care; and
- Government services.

Estimated gross county economic output for Lincoln County in 1999 was \$129.9 million. The service-based cluster, with an estimated production of \$70.9 million, was the largest in terms of output (see **Table 3.23-4**).

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Results of the clustering show a relative lack of production- or commodity-based output in Lincoln County and the higher dependency on service-based and government outputs.

Table 3.23-4
Composition of County Economic Output for Year 1999

Economic Cluster	Lincoln County		White Pine County	
	Annual Output (in millions)	Percent of Total	Annual Output (in millions)	Percent of Total
Production	\$22.1	17.2	\$171.5	43.7
Trade	\$8.1	6.2	\$36.1	9.2
Services	\$70.9	54.5	\$110.9	28.2
Government	\$28.7	22.1	\$74.3	18.9
Total	\$129.9	100.0	\$392.8	100.0

Source: Minnesota Implan Group 2001.

White Pine County's economy had a total output of \$392.8 million; approximately three times that of Lincoln County. At that time, production-based activity, lead by mining, was the largest cluster with annual output of \$171.5, followed by government at \$74.3 million. Contractions in mining since that time have undoubtedly reduced overall output substantially. The high reliance on a production-based economy may typify the natural resource-based economies of many western, rural economies, but also the economic development challenges that communities face with an erosion of that base.

Farming and Ranching

Farming and ranching were traditionally major parts of rural Nevada's economic base. Over the past several decades, that role has been largely supplanted by tourism, mining, and government. Agriculture has struggled to remain viable in an environment characterized by increasing production costs, productivity gains, weak prices, and the effects of extended drought. Nevertheless, agriculture and its strong links to the use of public lands, primarily in the form of grazing, remains an important dimension of the socioeconomic environment in the Ely District. However,

RMP Management Focus

The restoration and maintenance of healthy ecological systems within watersheds is a primary focus for the future management of the Ely District. Healthy ecological systems are geographically diverse and change over time. They are compatible with soil potential and are resilient to disturbance.

Resources and resource uses will be managed to restore or maintain ecological health. Certain resource management changes and active treatments may need to be implemented, in portions of watersheds, to accomplish this objective. Adaptive management will be pursued to avoid deteriorating conditions favoring invasive plants and catastrophic fires. Any projects will be implemented so as to result in a mosaic of vegetation within a watershed.

In the long term, natural disturbance (such as drought or fire) will occur and fewer treatments will be needed to maintain ecological health. The result will be a variety of vegetation phases within a watershed, which will provide diverse, healthy conditions for future generations.

recent data indicate that the agricultural sectors of Lincoln and White Pine counties have experienced economic contractions mirroring the overall trend statewide.

Every 5 years, agriculture is the subject of a national economic census. The most current data release is from the 2002 agriculture census. The 2002 census tallied 230 farms and ranches (collectively termed farms in the census) operating in Lincoln and White Pine counties, 6 fewer than five years earlier in 1997.² Farms in White Pine County comprised 203,106 acres in 2002, down from 247,446 acres in 1997. The total farm acreage in Lincoln County was not disclosed for 2002, but is estimated at about 46,500 acres, down from 48,497 in 1997. Thus, the combined area of farmed land in Lincoln and White Pine counties declined by an estimated 46,337 acres, or 16 percent, between 1997 and 2002. **Table 3.23-5** presents selected farm data from the 1997 and 2002 agriculture censuses for Lincoln and White Pine counties.

Table 3.23-5
Summary Characteristics of Local Agriculture for Census Years 1997 and 2002

Category	Lincoln County			White Pine County		
	1997	2002	Percent Change	1997	2002	Percent Change
Number of Farms	121	109	-10	115	121	5
Acres in Farming	48,497	46,500 (est.)	-4	247,446	203,106	-18
Average Acres per Farm	404	427 (est)	6	2,152	1,679	-22
Farms by Size						
1 to 50 acres	37	38	3	28	30	7
50 or more acres	84	71	-16	87	91	5
Farms by Volume of Sales						
Less than \$5,000	40	47	18	38	39	3
\$5,000 or more	81	62	-23	77	82	6
Principal Occupation						
Farming	60	67	12	71	67	-6
Other	61	42	-31	44	54	23
Tenure						
Farming owners	90	80	-11	82	92	12
Part owners & tenants	31	29	-6	33	29	-12
Number of Farms						
With cattle	102	89	-13	71	76	7
Head of Cattle (Inventory)	14,784	13,703	-7	25,469	24,940	-2
Harvesting Alfalfa	78	43	-45	86	74	-14
Acres Harvested	10,069	14,996	49	18,136	16,332	-10

Source: U.S. Department of Agriculture 2004 and various years.

Farms in Lincoln County averaged 427 acres (estimated) in 2002, an increase of 6 percent over the 404-acre average in 1997. Average farm size in White Pine County declined by 22 percent, down from 2,152 acres in 1997 to 1,679 acres in 2002. The latter reflects the reduction in total farmed land and

²A farm is "any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold during the year." Government payments are included in sales (U.S. Department of Agriculture various years).

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declines in the number of large farms that either abandoned farming operations or subdivided one large ranch into several smaller units. Most of the local farms are operated as an ongoing economic enterprise. In 2002, 134 farmers and ranchers identified farming as their principal operation, up from 131 in 1997, while 144 operations had sales of \$5,000 or more, down from 158 in 1997.

Raising livestock, mainly cattle, is the principal source of cash income for most farming operations in the District. Cash receipts from livestock sales in the two counties totaled \$11.8 million in 2002, compared to \$14.4 million in 1997. Sales of feed and other crops yielded total receipts of \$5.8 million in 2002, compared to \$6.3 million in 1997, and \$2.3 million from all other sources in 2002, compared to \$2.4 million in 1997.

Livestock-related income accounted for over 70 percent of the total farm income in White Pine County in 1997 and 2002 and about 46 percent in Lincoln County in 2002, compared to 51 percent in 1997. In 2002, 165 farms reported a combined inventory of 38,643 head of cattle compared to 173 farms in 1997 that reported a combined inventory of 40,253 head of cattle. In the two counties together, farmers harvested 31,328 acres of alfalfa in 2002 as a cash crop or as winter feed for their herds compared to 28,205 acres of alfalfa harvested in 1997.

Net farm income in Lincoln County, excluding corporate farms, was substantially higher in 2002 compared to 1997, having climbed from \$0.52 million to \$2.53 million in Lincoln County between 1997 and 2001 before dropping to \$1.96 million in 2002. Higher farm income reflected the price gains sustained during the period. Net farm and ranch income also grew in White Pine County from \$0.38 million in 1997 to \$2.67 million in 2001 and then to \$3.22 million in 2002. Net farm income in the two counties combined was \$5.2 million in 2001, or 5.5 percent of the statewide farm income of \$95.1 million, and \$5.2 million in 2002, or 6.5 percent of \$79.5 million of farm income statewide (U.S. Bureau of Economic Analysis 2004).

Grazing on public lands serves an important role in sustaining the local agriculture industry. Such grazing provides the summer range for cattle, allowing pastures and cropland to be used to raise winter feed. As described in Section 3.16, Livestock Grazing, there are 232 grazing allotments in the District. Licensed grazing use in 2002, following several years of extended drought, was 183,702 animal unit months. That total represents a 20 percent decline from 2000. Changes in licensed grazing use on public lands are a contributing factor to changes in farm and ranch income.

Mineral Development

Mineral development has been part of White Pine County's history for nearly 150 years, dating to exploration by Army personnel and early prospectors in the 1860s. The Robinson mining district, home to one of the nation's largest low-grade copper ore deposits and still active today with the recent reopening of the Robinson mine by Quadra Mining, Ltd. was discovered in 1868. Copper mining was the driving force bringing the Nevada Northern Railroad to the area. The railroad now operates as a tourist train, but is at the center of a plan to reestablish freight rail service in the region.

Over decades, copper production in the region has fluctuated in response to the demands accompanying the nation's involvement in two world wars, other military conflicts, and increasing industrial and household consumer markets. Those demands carried the industry into the 1970s, at which time falling market prices

and foreign production forced cutbacks in local production. The industry remained relatively dormant until rising prices for gold and silver and improvements in mining technology and productivity triggered a new round of mining expansion in White Pine County. In 1989, 10 gold and copper mines were operating in White Pine County. Several of those operations involved reworking of tailings and thus had relatively short life spans. Falling prices through the mid-to-late 1990s triggered the curtailment of several other mines, including the Robinson mine then operated by BHP. In 2002, only two operating mines remained in White Pine County, Bald Mountain and Mooney Basin, with other plans on hold because of weak economics.

The recent acquisition and reopening of the Robinson mine by Quadra Mining in 2004 and higher gold prices may be indicative of changing economic conditions that could trigger new mineral development during the life of the RMP. Ore processing at the Robinson mine was initiated in August 2004, and the first copper concentrate was shipped in October 2004. Quadra and its mining contractor Washington Group Nevada reported a combined employment in February 2005 of 369 persons, approximately 95 percent of whom live in White Pine County. Current reserves support a 10-year mine life. In addition to copper, production at the Robinson mine will include gold and possibly molybdenum and rhenium (Quadra Mining, Ltd. 2005). Other mineral development in the region includes some crude oil production in Nye County, sand and gravel in many locations across the District, and perlite from a deposit in Lincoln County.

Recreation and Tourism

Public lands, be they federal, state, or local, comprise a resource base for public recreation and tourism in the District. Uses include off-highway vehicle use, camping, hunting, hiking and biking, wildlife observation, fishing, historical/geological/cultural exploration, backcountry use of designated wilderness areas, and various winter sports. Abundant recreation opportunities are located within the District, supporting substantial annual use by residents and visitors, which in turn generates support for the local economies.

Insights into the significance of recreation to the local economy can be gained from the estimated use reported by the various key agencies. Annual visitation to the Great Basin National Park, established in 1986, was 79,879 in 2004 and has averaged 83,087 over the past 5 years. Visitation to the Park is highly seasonal, concentrated primarily from May through September. Seven of Nevada's 21 state parks are located within the District, five of which are in Lincoln County. Annual visitation totaled 324,275 users at these 7 state parks in 2003 and 316,045 through November 2004 (Nevada State Parks 2005). In recent years, organized off-highway vehicle events in Lincoln County and northern White Pine County have been attracting increased levels of activity.

The area also supports substantial levels of hunting and fishing. The Nevada Department of Wildlife licenses hunts for antelope, elk, mule deer, and a limited number of mountain lion in the area. Licenses also are issued for bird and small game hunting. Big game tags for deer, elk, bighorn sheep, antelope, and mountain lion are issued by lottery draw. Applicants exceed the number of available tags, often by a substantial margin. Hunting of upland game and small game species and fishing occur under the auspices of the general hunting license and stamps.

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Travel and tourism is yet another form of economic activity in the District that is tied to the public lands. Tourism resources and attractions include the Nevada Northern Railroad, the historic railroad depot in Caliente, U.S. Highway 50 and Great Basin scenic routes, and numerous historical sites throughout the region.

The economic contributions associated with recreation and tourism has not been quantified, but the linkages are apparent in the types of businesses operating in the District. The U.S. Census Bureau reported that 100 of the 300 private sector establishments doing business in Lincoln and White Pine counties in 2001 were either in retail stores, eating and drinking places, or motels or other overnight lodging accommodations.

Hunting and Fishing

Hunting, fishing, and non-consumptive recreation pursuits associated with wildlife, such as watching or photographing, are an important part of the regional economy and quality-of-life. A national study of such pursuits estimated residents and non-residents spent \$681 million in Nevada on wildlife-related recreation in 2001. Of that total, about \$168 million was related to the actual, active participation, for example, food, lodging, or fuel. The remaining \$513 million was for equipment, licenses, guide and outfitting services, and memberships. Non-consumptive activities accounted for 42 percent of the total spending, following by fishing (36 percent) and hunting (22 percent). Total activity levels within the state were estimated at 1.58 million days of fishing, 490,000 days of hunting, and 609,000 days of non-consumptive wildlife related use (U.S. Department of Interior 2003).

All three types of activity occur on public and private lands across the Ely District. County-level estimates of sportsmen fishing were not prepared as part of the 2001 national study, but the 5,738 resident and 1,140 nonresident hunting and fishing licenses sold in Lincoln and White Pine counties in 2002-2003 are indicative of the economic and social importance of these activities in the region (see Table 3.23-6).

Table 3.23-6
Nevada Fishing and Hunting Licenses Sold, 2002-2003

	Lincoln County	White Pine County
Resident Fishing	1,395	2,216
Resident Hunting	244	336
Resident Hunting/Fishing Combination	494	1,053
Nonresident Fishing	186	887
Nonresident Hunting	33	34
Total Licenses Sold	2,352	4,526

Source: Nevada Department of Wildlife 2004.

Published big-game tag sales and hunting statistics indicate about 6,500 resident and 550 non-resident big game hunts occur within the District, although not necessarily on lands managed by the Ely Field Office (Nevada Department of Wildlife 2004). Applying results for Nevada from the 2001 national survey to the

combination of license and tag sales yields estimated annual spending of \$25 million to \$30 million by resident and non-resident participants in the District. However, that spending is not captured entirely within the District due to factors such as mail order purchasing and fishing and hunting by residents outside of the District.

Guided fishing and hunting trips are an important economic stimulus because of the income they generate for the guides and outfitters and the purchases of goods and services made by those guides and outfitters to provision the hunts. Local guides and outfitters, licensed by Nevada Department of Wildlife, provide guided big game hunts for residents and non-residents alike. Such hunts are typically 1 week in duration and involve packing into remote areas. In addition to involving a licensed master guide, such hunts require special recreation permits issued by the BLM when they occur on BLM-administered lands. An outfitter and guide service may provide services to multiple hunters during the course of the complete hunting season. Nevada Department of Wildlife has licensed nearly 90 master guides for one or more big game species in areas included within the District, 10 of whom reside in the area. Another 19 sub-guides, who work with master guides, also live in the area (Nevada Department of Wildlife 2004).

The number of guided hunters conducting hunts under special recreation permits issued by the Ely Field Office has increased over the past several years from 63 in 2000 to 174 in 2003. Fee receipts in 2003 totaled \$9,631.

Native Plant Products

Another economic linkage between the District and the local economy stems from personal collection and use of woodland products. The Ely Field Office issues permits allowing the collection of fuelwood, pinyon pine nuts, Christmas trees, and posts and poles. Permit sales over the past 7 years have ranged from 1,515 to 1,875 cords per year of fuelwood, 0 to 26,000 pounds of pinyon pine nuts, 540 to 4,918 Christmas trees, and 1,500 to 3,118 posts. Private use accounted for nearly 93 percent of the total, with commercial sales accounting for about 7 percent.

Personal Income and Poverty

Total personal income has grown consistently over time. Between 1985 and 2002, total personal income in Lincoln County increased by 86 percent, climbing steadily from \$48.3 million to \$89.6 million (see **Table 3.23-7**). Personal income in White Pine County increased from \$91.9 million to \$228.6 million during the same period (a 149 percent increase) exceeding the previous peak of \$224.7 million that occurred during the height of mining activity. Adjusting for inflation reduces the gains in total personal income to 13 and 51 percent in Lincoln and White Pine counties, respectively.

Wage and salary earnings accounted for about 66 percent of total personal income in the District in 2002. The statewide average was 76 percent. Dividends, interest, and rents accounted for 17 percent of local income, comparable to the 21 percent statewide. Transfer payments such as social security, Medicaid, and unemployment benefits accounted for about 18 percent of the total income, compared to just 12 percent statewide.

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Table 3.23-7
Total Personal Income 1985 to 2002
(in millions)

County	1985	1990	1995	2001	2002	Percent Change
Lincoln County	\$48.3	\$68.9	\$74.0	\$83.7	\$89.6	86
White Pine County	\$91.9	\$155.3	\$196.8	\$220.5	\$228.6	149

Source: U.S. Bureau of Economic Analysis 2003 and 2004.

Government and government enterprises account for 30 percent of all direct earnings paid to workers in Lincoln County and 32 percent of earnings in White Pine County in 2002. Both shares are considerably higher than the 11 percent of statewide labor earnings from government. The high local concentrations of earnings from the government sectors reflect a shift away from natural resource-based development (i.e., mining) as the predominant source of high-paying jobs. Jobs in the mining industry historically have been among the highest paying jobs in the region. In 2000, annual earnings per worker in mining in White Pine County averaged nearly \$54,300. While the average earnings for federal government employees also were comparatively high, those for state and local government lagged behind those in the private sector. The average earnings for state employees in Nevada have risen in recent years, outpacing earnings growth in the private sectors. As a result, state employees in the District, most of whom work at the state correctional facilities and the Nevada Department of Transportation, had average earnings in excess of \$54,000 in 2000. Moreover, employment levels of these state agencies do not fluctuate dramatically, providing a degree of economic stability for local communities.

Gains in total personal income translate to increased personal income on both a per-household and per capita basis. The increases in local income, however, have not kept pace with broad gains made across the state and nation. As a result, per capita personal incomes continue a long-term trend of lagging statewide and national averages. As measured by the Bureau of Economic Analysis, per capita incomes in Lincoln and White Pine counties in 2002 were 69 percent and 87 percent, respectively, of the Nevada average of \$30,559 and 71 percent and 89 percent, respectively, of the U.S. average of \$29,847.

Median household income in 1999, as recorded in the 2000 Census, was \$31,979 in Lincoln County and \$36,688 in White Pine County. The two counties ranked seventeenth and thirteenth lowest among Nevada counties and were well below the statewide average of \$44,581 (see Table 3.23-8). Note that the Census Bureau measures income using a different definition from the Bureau of Economic Analysis.

The percentage of households in the District with very low incomes is substantially higher than the statewide average (see Table 3.23-9). Lower incomes translate to an elevated incidence of poverty among residents in the District, particularly in Lincoln County.

Across the state, almost one in 10 households lived in poverty. By comparison, in Lincoln County the rate was about one in 6 households (16.5 percent), the highest in Nevada. Countywide poverty rates in Nye and

White Pine counties, at 10.7 percent and 11.0 percent, respectively, were above the statewide average, too, but only by a small fraction.

Table 3.23-8
Household and Per Capita Income for Year 1999

County or State	Median Household Income		
	Amount	Statewide Rank ¹	Percent of State Average
Lincoln County	\$31,979	17	72
White Pine County	\$36,688	13	82
Nevada	\$44,581	NA	NA

¹Rank is among Nevada's 17 counties, with 1 being the highest.

N/A = Not applicable.

Source: U.S. Census Bureau, Census 2000.

Table 3.23-9
Poverty Rates Among Residents 1999

County or State	Persons Below Poverty	Percent of Population	Statewide Rank ¹
Lincoln County	626	16.5	17
Nye County	3,454	10.7	9
White Pine County	866	11.0	11
Nevada	205,685	10.5	NA

¹Rank is among Nevada's 17 counties, with 1 being the lowest.

N/A = Not applicable.

Source: U.S. Census Bureau, Census 2000.

Several communities within each county have high poverty rates relative to county and state averages. In Lincoln County, 20 to 25 percent of the residents of the communities of Alamo and Caliente were below the poverty threshold in 1999. In the Duckwater Census Civil Division of Nye County, 17.4 percent of residents lived at or below the poverty threshold, and in White Pine County the poverty rate was above average in the McGill and Ruth areas. In the communities of Ely and Baker, also in White Pine County, the poverty rate was comparable to the statewide average.

Moderately high incomes in the \$50,000 to \$60,000 range also occur more frequently in Lincoln and White Pine counties than across the state, most likely due to the large numbers of federal and state employees in those counties. However, the relative frequency of households with incomes of \$75,000 or more is lower in the District than in the state as a whole: 12 percent locally compared to 21 percent statewide.

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Payments in Lieu of Taxes. Congress authorized "payments in lieu of taxes" to local governments that have certain federal lands within their boundaries (31 U.S. Code 6901-6907 – 1976). Payments in lieu of taxes are part of the federal receipts for land and resource use that are shared with local governments to help defray the costs of providing public services such as law enforcement, fire protection, and roads that are affected by the presence and use of those federal lands.

Payments in lieu of taxes payments are authorized to local governments, generally counties, based on the acres of "entitlement lands" within their boundaries. Entitlement lands consist of lands in the National Forest and National Parks systems, some lands involved in U.S. Army Corps of Engineers projects, National Wildlife Reserves, and lands administered by the BLM. The amount of payments in lieu of taxes allocated to each local government is formula based, factoring in the number of entitlement acres, a per acre payment rate, deductions for certain other federal land payments, and a per-capita ceiling or cap on payments based on the area's population. The cap is a sliding scale, ranging from \$110.00 per capita for counties with population of 5,000 or less, to \$44.00 per capita for counties with 50,000 residents. The amount of payments in lieu of taxes is not a direct function of the land use activity or any mineral production that might occur on the land, although such activities may generate other payments to the local government that could be deducted from the payments in lieu of taxes entitlement.

A total of 20.2 million acres of entitlement land are located in the three counties: 6.4 million acres in Lincoln, 5.3 million in White Pine, and 8.5 million in Nye. The majority of the overall total is BLM-administered land. Public lands managed by the Ely Field Office account for about 1.3 million acres of the Nye County total.

Total annual payments in lieu of taxes payments to the three counties have doubled since 1999 from \$1,255,770 in 1999 to \$2,571,415 in 2004 (see **Table 3.23-10**). Payments in lieu of taxes payments were \$396,803 to Lincoln County in fiscal year 2004, \$1,531,911 to Nye County, and \$642,701 to White Pine County.

Table 3.23-10
Federal Payments in Lieu of Taxes to Local Counties for Fiscal Years 1999 to 2004

Fiscal Year	Lincoln County	Nye County	White Pine County
1999	\$221,171	\$685,535	\$349,064
2000	\$222,136	\$763,264	\$368,447
2001	\$314,534	\$1,186,179	\$519,000
2002	\$330,193	\$1,245,237	\$544,839
2003	\$385,964	\$1,490,188	\$625,150
2004	\$396,803	\$1,531,911	\$642,701

Source: BLM 2003f.

Payments in lieu of taxes payments to all three counties are constrained by the population based caps. In other words, all three counties receive less than the base entitlement amount calculated from the local entitlement acreage. For Lincoln County and White Pine counties, the effects of the population cap have

been substantial reductions in actual receipts. Recent and ongoing population growth in Nye County has diminished the impact of the population constraint over time.

Actual payments in lieu of taxes payments to counties are subject to further reductions based on the level of Congressional funding appropriated for the payments in lieu of taxes program. Historically, appropriations levels have not funded the program fully. For fiscal year 2004, the appropriations were about 67.7 percent of the full funding level. Consequently, the actual payments to counties for fiscal year 2004 reflected about a 32.3 percent pro-rata reduction.

Countywide Assessed Valuation. Taxes imposed on real and personal property and on the proceeds from mining operations are an important revenue source for local governments in Nevada, particularly counties. Although federal lands are exempt from taxation, the proceeds of natural resource development are subject to tax. Under Nevada law, a county's assessed valuation includes the net proceeds derived from the production of minerals (ores, oil, gas, and other hydrocarbons) after production expenses are netted out from gross receipts. The derivation of assessed valuation captures changes in the amount of development or level of production and changes in mineral commodity prices due to market forces.

Lincoln County has a relatively low assessed valuation that has increased steadily, albeit modestly, from \$77.4 million in 1994/95 to \$105.1 million in 2004/05 (see **Figure 3.23-2**). With limited natural resource development occurring in the county, primarily sand and gravel, mining-related assessments have accounted for little of the county's tax base.

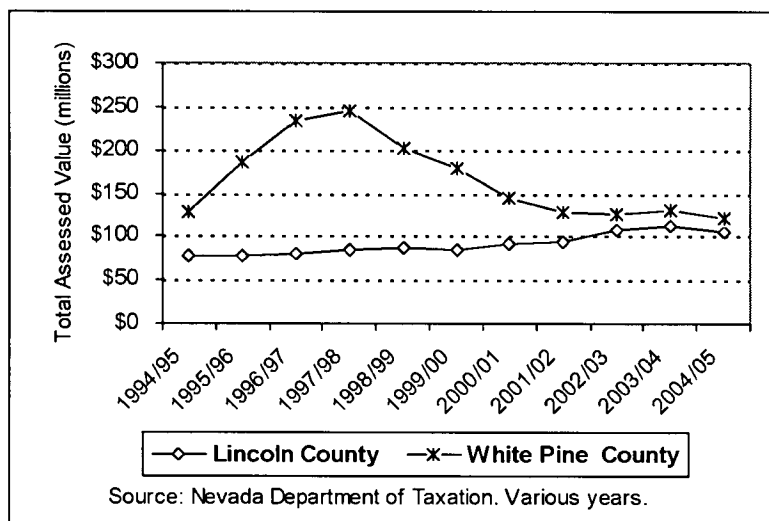


Figure 3.23-2. Assessed Valuation in Lincoln and White Pine Counties 1994 to 2004

The trends in White Pine County's assessed valuation are more pronounced. Increases in mineral development and the commercial and residential development it help spawn, resulted in a \$117.9 million (92 percent) increase in total assessed valuation in just 3 years. A similar decline occurred from 1997/1998 to 2001/2002 due to falling production, mine closures, and falling real estate values prices. The volatility of

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mineral related assessed value, which is in part attributable to the limited tax base that is inherent in rural counties with large public land holdings, is another common dimension of the local socioeconomic environment that challenges residents and governments alike. White Pine County may expect to realize an increase in assessed valuation from the recent reopening and renewed production at the Robinson Mine near Ely.

3.24 Social Conditions

3.24.1 Population

Historical Population Trends

The Ely District is a rural and sparsely populated area where historical population trends reflect the influence of mineral development activity and of federal activities at the nearby Nevada Test Site and Nevada Test and Training Range. Mineral development has been the strongest influence in White Pine County, causing a series of population cycles since 1970 (see **Figure 3.24-1**). From 1972 to 1979, population decreased 22 percent in White Pine County. Beginning in 1979, White Pine County population was in an upward trend that included an increase of 29 percent from 1987 to 1997. Then, from 1997 to 2000, population in White Pine County decreased by more than 1,850 persons following closures and layoffs at several of the area's gold and copper mines. Activities at the nearby Nevada Test Site and Nevada Test and Training Range, the other major economic force in the Ely District, have had more of an influence on Lincoln County. The effect of federal energy and defense activity on population in Lincoln County has been some cyclical change but more generally a modest upward growth trend since 1970.

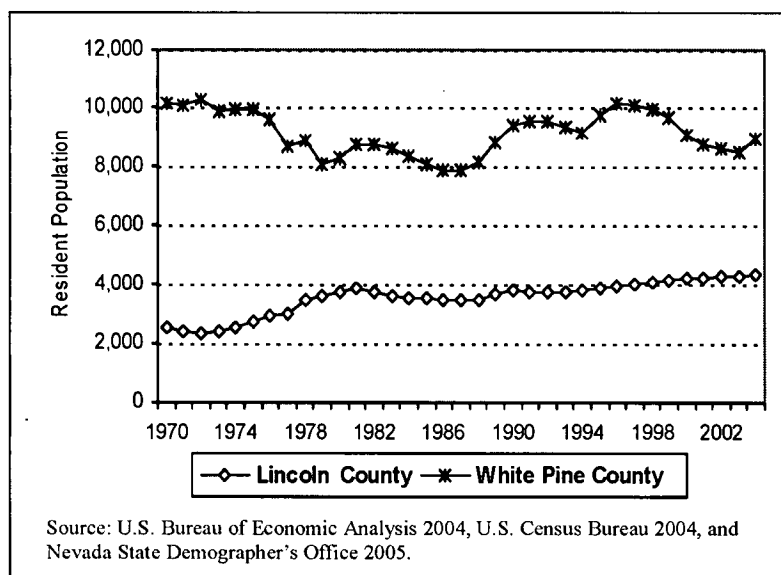


Figure 3.24-1. White Pine and Lincoln County Populations 1970 to 2004

Between 1990 and 2000 the Ely District experienced a net increase in population (see **Table 3.24-1**). The District's population was 13,596 in 2000, up from 13,337 in 1990, a gain of 1.9 percent.³ The District's population in 2000 represented less than 0.7 percent of Nevada's total population. Within the District,

³The Nye County part of the District does not directly coincide with the census geographies used for Census 2000. The Duckwater Census Civil Division offers a reasonable estimate of the population in the Nye County part of the District because the area is very rural with few farm and ranch households due to the limited amount of private land.

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Lincoln County gained population from 1990 to 2000, and White Pine County and the eastern portion of Nye County both lost population. In 2000, White Pine County's 9,181 residents accounted for 67.5 percent of the District total.

Table 3.24-1
Estimated Population in the BLM Ely District 1990 to 2000

County	Year		Change 1990 to 2000	
	1990	2000	Absolute	Percent
Lincoln County	3,775	4,165	390	10.3
Nye County (Duckwater Census Civil Division)	298	250	(48)	-16.1
White Pine County	9,264	9,181	(83)	-0.9
District Total	13,337	13,596	259	1.9

Source: 1990 Census of Population and Census 2000; U.S. Census Bureau.

The American Indian Reservations involved in the District had a combined population of 387 in 2000, a net increase of 73 individuals over the total in 1990. Of the total in 2000, 297 residents lived within the District's outer boundaries and the remainder lived on the Utah part of the Goshute Reservation. The Ely and Duckwater reservations gained population between 1990 and 2000. Population declined by 19 persons on the Nevada portion of the Goshute Reservation during that period.

Estimated Population Since 2000

Lincoln County as a whole grew by 10.3 percent from 1990 to 2000. All areas of Lincoln County grew during that time, but growth was the strongest in the Pioche area. White Pine County as a whole lost 0.9 percent of its population from 1990 to 2000. Within White Pine County, population decreased in the Ely and Lund areas during that time and increased in the McGill and Baker areas.

Population estimates prepared by the Nevada State Demographer's Office and the U.S. Census Bureau paint somewhat different pictures of population change since 2000 in the principal counties of the District. The State Demographer's estimates indicate that Lincoln County experienced modest population decline through 2003, with a slight gain to 3,822 in 2004, down 343 persons from 2000. In White Pine County, the State Demographer's estimates show several years of population decline, followed by modest growth to yield a population of 8,966 in 2004, up 215 from 2000.

The Census Bureau's estimates for 2000 to 2003 indicate a net population growth of approximately 100 persons in Lincoln County, to 4,264 in 2004, but a net reduction of nearly 600 residents to 8,490 in White Pine County. Recent population estimates are not available for the Duckwater Census Civil Division.

The reasons for the difference between the two sources of county-level population estimates are not known. However, other available economic data would tend to support the higher estimates for each county, or the Census Bureau's estimate of 4,264 in 2004 in Lincoln County and the State Demographer's estimate of 8,966 in 2004 in White Pine County. In Lincoln County, other data suggest that there have been gains in

retirement migration and in migration by households in which one or more workers commute to jobs in Clark County to the south. In White Pine County the reopening of the Robinson mine in 2003 and subsequent expansion of its workforce would argue against population declines.

Demographics. In 2000, over 87 percent of residents in the Ely District identified themselves as white. That percentage is substantially above the statewide average of 75 percent whites (see Table 3.24-2). Individuals identifying themselves as American Indians or Alaska Natives, including 204 individuals living off the reservations, comprise 3.6 percent of the District's population. Blacks, Asian, individuals of other races or of two or more races accounted for a much smaller share of residents in the District than in the state as a whole; 9.1 compared to 24 percent, respectively.

Table 3.24-2
Ely District Population by Race for Census Year 2000

Race	Nevada (percent)	Ely District (percent)
White alone	75	87.3
American Indian or Alaska Native	1.3	3.6
Black, Asian, other race, or two or more races	24	9.1

Source: U.S. Census Bureau, Census 2000.

Across Nevada, 98.3 percent of all residents lived in households, the other 1.7 percent of residents living in group quarters.⁴ The percentage of residents in group quarters is much higher in Lincoln and White Pine counties, 8.4 percent and 13.5 percent, respectively, due to the location of state correctional facilities in Caliente and near Ely. The large institutionalized population in White Pine reflects the 1989 opening and subsequent expansion of the Ely State Prison to its present capacity of about 1,200 inmates.

Residents of the Ely District are slightly older than the statewide population, in terms of median ages; 39 years in Lincoln County and 38 years in White Pine County compared to 35 years statewide. Factors that likely contributed to the variances include the outflow of working age households following recent declines in the mining industry, the relatively static size and age profiles associated with the institutionalized populations at the Caliente Youth Center and the Ely State Prison, and the attraction of retired residents to the area. Residents aged 65 and older account for 16 percent of Lincoln County and 13 percent of the White Pine County residents.

Student enrollment in public schools is an important barometer of local socioeconomic conditions. The schools in the district operate under a unified school district in each county. Total county enrollment at the beginning of the 2002/03 school year was 1,006 students (kindergarten to 12) in Lincoln County and 1,446 (pre-kindergarten to 12) in the White Pine School District. Overall enrollments have trended

⁴The Census Bureau classifies all people not living in households as living in group quarters. There are two types of group quarters: institutional (correctional facilities, nursing homes, and mental hospitals) and non-institutional (for example, college dormitories, military barracks, group homes, missions, and shelters).

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downward in Lincoln and White Pine counties until very recently. During the eight years ending with the 2002/03 school year, the declines numbered 117 students in Lincoln County and 545 students (28 percent) in White Pine County. Since then, Lincoln County has gained 14 students and White Pine has gained 11 students. The Nye County School District teaches grades K-6 at a school in Duckwater. Enrollment at that school was 12 students at the beginning of the 2004/05 school year. Middle and high-school students, grades 7-12, living in the Duckwater area attend school in Eureka under an agreement between the respective districts.

Housing. Housing availability, affordability, and conditions are important elements of community development and local socioeconomic conditions. Housing conditions can affect migration, quality of life, the cost of living, and a community's capacity to accommodate growth and public infrastructure investment.

From 1990 to 2000, the housing stock in Lincoln County increased by 378 to a total of 2,178 dwelling units. There were 4,439 housing units in White Pine County in 2000, 457 more homes than the 1990 count of 3,982 units. The housing supply in the Duckwater Census Civil Division totaled 154 housing units, 65 on the reservation and 89 units in the remainder of the Census Civil Division. While the total number of units in both Lincoln and White Pine counties increased, the number of occupied units actually declined in White Pine County. Across the District, about 73 percent of all units were occupied in 2000. Owner occupancy of the occupied units averaged about 75 percent, and 25 percent were renter-occupied.

In 2000, nearly half of the 638 vacant homes in Lincoln County were for seasonal, recreational, or occasional use. Only 87 units were available for rent or sale. Units listed for sale or rent numbered 422 in White Pine County, with another 232 units identified for seasonal or recreation use. Single-family homes were the largest shares of housing in Lincoln and White Pine counties, 63 percent and 72 percent, respectively.

The housing stock in Lincoln and White Pine counties is relatively old. Homes built 30 or more years ago accounted for 43 percent of all homes in Lincoln County and 58 percent of homes in White Pine County. There were 206 homes in Lincoln County built in 1995 or later. The number of homes less than 6 years old totaled 435 units in White Pine County.

Social Values and Attitudes Regarding Public Land Management. The process of planning and administering public lands involves trade-offs and balancing among competing demands and opportunities associated with the physical and natural resources within the statutory and regulatory framework established by Congress and various administrative guidance.

The vast land area and concentration of BLM-administered lands within the District spawn substantial stakeholder interest in the Field Office's management decisions for the area. For this discussion, stakeholders are defined as individuals or groups of people who have an interest or interests in public lands and the decisions affecting those lands. The commonalities within a stakeholder group can arise due to geography, occupation, lifestyle interests, membership or group affiliation, or ethnic and cultural ties. Individuals often belong to multiple stakeholder groups (e.g., a local businessman/rancher who holds a grazing permit, hunts, and serves on a local economic development organization). Depending on the forum and topic, stakeholders may participate in the planning process as individuals, as well as in some type of

official capacity. Stakeholder groups need not have a physical presence in the area to participate or be engaged in the process.

Because of the diversity of issues involved in land management planning, some stakeholders focus their attention narrowly, on specific issues. Others are concerned about a much broader range of issues and topics. Stakeholders who engage in the process typically do so with the aim of influencing the decision in a way promoting their particular interest, position, or values. Stakeholder groups may be characterized in terms of one or more key attributes or descriptors, such as consumptive versus non-consumptive uses, local or nonlocal, individual or organization, programmatic (e.g., wild horses or designated wilderness), or philosophical (sustainable development or maximum yield). While some of these attributes are dichotomous in form (e.g., supports off-highway vehicle use or opposes such use), others relate to positions along some type of continuum (e.g., number of acres of designated wilderness that is desirable).

Scoping conducted at the outset of the RMP/EIS process identified a broad range of social values and stakeholder interests in the Ely District (see Section 1.6, Scoping Issues). Ongoing intergovernmental coordination efforts and participation by cooperating agencies provide additional insights into stakeholder interest and values (see Chapter 5.0, Consultation and Coordination).

Local residents and organizational interests have a strong and often direct relationship with BLM administration of public lands in the Ely District. Many residents are at least partially dependent on these lands for their economic livelihood (e.g., ranchers who maintain and operate livestock grazing permits, commercial big game hunting guides and outfitters, individuals employed in mining, and the staff of the agencies themselves). Some long-time residents see these uses of the land as part of their local custom and culture, which they believe ensures them to at least some preferential consideration. In turn, the revenues generated by those activities help support other local businesses and the functioning of local government. Maintaining and expanding economic uses of the public lands are important for these stakeholders.

Local governments and Tribes also are interested in expanding uses that support economic development in the District. That interest reflects recognition of the region's historical economic dependency on natural resource use and the recent downturn in such use, but also a belief that the economic development of the area is being constrained by the lack of private land and the impacts of public land management decisions that affect agricultural, industrial, and commercial recreation and tourism development. These interests manifest themselves in policies discouraging actions that would result in the loss of additional private lands, promoting additional land disposal to local governments or to private ownership, and expanding outdoor recreation opportunities, particularly for off-highway vehicle use. Due to recent wildfires, both local and nonlocal governments are increasingly concerned about wildfires on public lands; the risks they pose to lives, private property, and local communities; and the potential impacts on fiscal resources and government operations.

The interests of American Indians in the region extend beyond land disposal issues because of their traditional ancestral and cultural ties to the area. Thus, protection of cultural resources and maintaining subsistence use of woodland products by Tribal members also are important social values (see Section 3.9,

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Cultural Resources, Section 3.25, American Indian Issues, and Chapter 5.0, Consultation and Coordination).

Another major stakeholder group is local residents having strong attachments to the public lands for various recreation pursuits and the contributions of such pursuits to their quality of life. These pursuits include rock-hounding, hunting, wildlife viewing, backcountry touring, four-wheeling and off-highway vehicle use, and camping. Proximity and ready access to these opportunities, which are ancillary attributes of the rural character and lifestyle of the area, are also key factors influencing their choice to live in the area. Along with factors such as affordable housing and Nevada's favorable personal income tax structure, local economic development interests are promoting outdoor opportunities to recruit retirees and others, whose residency choices are largely independent of a specific work-site or location, to move to the area.

Non-local interest in the RMP/EIS process echoed some of the same values and interests held by residents. At the same time, other non-local interests supported a management emphasis more focused on ecological system health and restoration. An example of the former was support voiced for increased opportunities for off-highway vehicle use, both for individuals and in the context of organized events. Much of that interest, which is consistent with local economic development interests, emanated from Las Vegas, Mesquite, and Reno, urban areas with many off-road vehicle/off-highway vehicle/dirt bike enthusiasts interested in expanding the area and range of trails and riding environments open to the public. Others, however, view off-highway vehicle use as threatening ecological system health and wildlife and being incompatible with other forms of outdoor recreation. Livestock grazing, declining biodiversity, wildfire risks, and the associated implications for invasive and noxious weeds also were identified as threats to ecological system health and wildlife. For these stakeholders, the value of ecological system health and wildlife warrants limiting or eliminating others uses, even if doing so may have adverse social and economic implications within the region for other users. Therein lies one of the classic challenges for land use planning and management, balancing the interests of local residents, which are often directly tied to the land, with those of non-locals whose interests are more philosophical.

3.25 American Indian Issues**3.25.1 Indian Trust Resources**

Indian Trust Resources are natural resources, either on or off Indian lands, that are retained by, or reserved by or for Indian tribes through treaties, statutes, judicial decisions, and executive orders, which are protected by a fiduciary obligation on the part of the U.S. Federal laws and guidance that may apply to Indian Trust Resources and other Indian issues within the conditions of the RMP include, but are not limited to, the American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, Indian Sacred Sites, and Secretarial Order #3206. Indian Trust Resources located on the Goshute, Ely Shoshone, or Duckwater Indian reservations, which are found within the District, are managed and protected by the tribes. Indian Trust Resources located on lands administered by the BLM are managed and protected by the BLM; however, no Indian Trust Resources have been identified on BLM-administered lands within the District.

American Indian tribes within the Ely District have used pinyon pine nuts as a traditional food source. The pinyon pine nut is culturally significant as it has been the focal-point of American Indian traditional ways of life and important to maintaining historical tribal gathering areas or culture-geography areas. Historically, tribes would have pinyon pine nut festivals at the conclusion of the harvest. These festivals provided an opportunity for: 1) tribes to gather with other tribal members; 2) the sharing of oral histories; 3) a social gathering that included dancing and hand-game tournaments; and 4) the performance of traditional religious practices. These cultural values have been practiced for generations, and are expected to be practiced into the future, as part of maintaining American Indian traditional ways of life.

3.26 Environmental Justice

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority and Low Income Populations," requires federal agencies to identify and address disproportionately high adverse impacts to human health or environmental impacts of federal actions on minority or low income populations. The three American Indian tribes and their members in the District are a population of concern, both as a minority and as a low income population. Historically, the administration of public land use may have affected existing subsistence or traditional culture practices of these peoples (see Section 3.9, Cultural Resources). The agency's goal when environmental justice issues arise is to reduce, to the extent practicable, the inequitable distributions of environmental benefits and costs, based on race, ethnicity, or income. The BLM also will promote and provide opportunities for full involvement of Tribes in BLM decisions that affect their lives, livelihoods, and health.

3.27 Health and Safety

Health and safety includes hazardous materials and conditions (including solid wastes) that have resulted from prior industrial or commercial activities on public lands or adjacent privately held properties. Hazardous materials also may include chemicals used by the agency for land treatment. The potentially affected environment resulting from the presence of hazardous materials includes, air, water, soil, and biological resources.

Hazardous materials, which are defined in various ways under a number of regulatory programs, can represent potential risks to both human health and to the environment when not managed properly. The term hazardous materials includes the following materials that may be utilized or disposed of in conjunction with a variety of industrial and commercial activities:

- Substances covered under the Occupational Safety and Health Administration Hazard Communication Standard (29 Code of Federal Regulations 1910.1200). Materials and substances covered under the Standard may be used in a variety of industrial and commercial activities and also may be subject to the regulations listed below.
- Hazardous materials as defined under the U.S. Department of Transportation regulations in 29 Code of Federal Regulations, Parts 170-177.
- Hazardous substances as defined by the Comprehensive Environmental Response, Compensation, and Liability Act and listed in 40 Code of Federal Regulations Table 302.4. Comprehensive Environmental Response, Compensation, and Liability Act regulations also govern the cleanup of contaminated sites. Sites evaluated under the Comprehensive Environmental Response, Compensation, and Liability Act that pose serious threats to human health and the environment may be placed on the National Priorities List and commonly are referred to as Superfund sites.
- Hazardous wastes as defined in the Resource Conservation and Recovery Act.
- Hazardous substances and extremely hazardous substances as well as petroleum products such as gasoline, diesel, or propane, that are subject to reporting requirements (Threshold Planning Quantities) under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act.
- Petroleum products defined as "oil" in the Oil Pollution Act of 1990. The materials defined under the Oil Pollution Act of 1990 include fuels, lubricants, hydraulic oil, and transmission fluids.
- There are a number of other federal statutes such as the Toxic Substance Control Act and Federal Insecticide, Fungicide, and Rodenticide Act that regulate substances such as polychlorinated bi-phenyls and pesticides. Asbestos is regulated by the Asbestos Hazardous Emergency Response Act.

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In conjunction with the definitions noted above, the following lists provide information regarding management requirements during transportation, storage, and use of particular hazardous chemicals, substances, or materials:

- Superfund Amendment and Reauthorization Act Title III List of Lists (USEPA 1996) or the Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-to-Know Act and Section 112(r) of the Clean Air Act.
- U.S. Department of Transportation listing of hazardous materials in 49 Code of Federal Regulations 172.101.

Resource Conservation and Recovery Act governs the handling and disposal of solid wastes (USEPA 1998). Solid wastes comprise a broad range of materials that include garbage, refuse, sludge, non-hazardous industrial waste, municipal wastes, and hazardous waste. Solid waste as defined includes solids, liquids, and contained gaseous materials. Hazardous wastes are those materials that exhibit certain characteristics (as defined by laboratory analysis), are generated from specific industrial processes, or chemical compounds, that if abandoned could pose a threat to human health and the environment.

In addition to the body of federal regulations listed above, the State of Nevada regulates hazardous materials through a number of environmental statutes and regulations that are enforced by the Nevada Division of Environmental Protection. The Nevada Division of Environmental Protection also supervises and implements a number of programs that regulate hazardous materials or are involved with the cleanup of contaminated sites.

3.27.1 Existing Conditions

Contaminated Sites

The BLM has limited regulatory authority over hazardous materials. However, the agency is part of the regulated community and has an obligation to abide by the existing federal and state statutes and regulations regarding hazardous materials and to require that leasees and right-of-way grantees also abide by such regulations as part of the lease or grant terms and conditions. However, there may have been past activities on BLM-administered lands that have resulted in conditions where hazardous wastes or substances may pose a potential threat to human health and the environment. Based on review of U.S. Environmental Protection Agency and Nevada Division of Environmental Protection databases (USEPA 2003a,b; NDEP 2003), there are no uncontrolled hazardous waste sites on BLM-administered lands in the Ely District that are under enforcement actions for clean up or violation of environmental regulations. However, there are several sites, that while not on the U.S. Environmental Protection Agency and Nevada Division of Environmental Protection lists as under cleanup enforcement actions, may pose a threat to human health and the environment. These sites include the Castleton Tailings site 3 miles southwest of Pioche and the Johnson Mill site 20 miles southeast of Caliente.

The database review indicated only one site on BLM-administered lands that has been investigated as a potential Superfund site. The site is known as the BLM-Caliente Landfill located in Section 28 Township 3

South, Range 67 East in Lincoln County and is listed on the Comprehensive Environmental Response, Compensation, and Liability Act Information System list of sites. The site investigation indicated that there was not evidence of a threat and the status of the site was designated as no further remedial action proposed.

Hazardous Conditions

In addition to potential contamination issues at mining sites, unsecured shafts and adits at abandoned mining sites present severe physical hazards to people and animals. The Nevada Division of Minerals cooperatively manage the Abandoned Mine Lands program and are responsible for identifying hazardous conditions at abandoned mines sites and securing dangerous mine openings. BLM and the Nevada Division of Minerals have a formal memorandum of understanding for the cooperative management of hazardous mining sites. According to the Nevada Division of Minerals, there are 313 and 347 identified abandoned mine hazards in Lincoln and White Pine counties, respectively. In Lincoln County, 254 hazards have been secured and in White Pine County, 313 hazards have been secured. No breakdown of hazards was readily available for the portion of Nye County in the Ely District. Nye County has a total of 883 identified hazards, 580 of which have been secured (NDOM 2003).

Chemical Use

Periodically the BLM uses herbicides to treat land that has been invaded by noxious weeds and invasive exotic species.

3.27.2 Trends

Contaminated Sites

It is likely that there are abandoned mines, mill sites, landfills, illegal dumps, and drug labs that pose a threat to human health and environment that have not been discovered, or that conditions at current sites have not manifested themselves to the extent that a threat has been perceived. For mining sites, contaminants potentially could move off-site onto federal lands.

Hazardous Conditions

Hazardous conditions at abandoned mine sites will continue to be mitigated through the Abandoned Mine Lands program conducted by Nevada Division of Minerals as funds become available to deal with the potentially most hazardous sites.

Chemical Use

The BLM is conducting a nation-wide evaluation of the use of herbicides on BLM-administered lands. The evaluation is to determine the safest chemicals that will efficiently treat affected lands.

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3.27.3 Current Management

Contaminated Sites

The Ely District handles contaminated sites when those sites become a recognized problem (Caselton Tailings and Johnson Mill Sites). There is no program to proactively determine the number of potential sites on BLM-administered lands that may pose contamination risks.

Hazardous Conditions

The Ely District participates in the Abandoned Mine Lands program that deals with hazardous conditions at abandoned mine sites. The District must approve the mitigation of hazardous conditions at mine sites on public lands. Hazardous mine conditions are mitigated by the by the Nevada Division of Minerals.

Chemical Use

The use of herbicides is conducted in accordance with applicable federal and state regulations and BLM guidance.

RMP Management Focus

The restoration and maintenance of healthy ecological systems within watersheds is a primary focus for the future management of the Ely District. Healthy ecological systems are geographically diverse and change over time. They are compatible with soil potential and are resilient to disturbance.

Resources and resource uses will be managed to restore or maintain ecological health. Certain resource management changes and active treatments may need to be implemented, in portions of watersheds, to accomplish this objective. Adaptive management will be pursued to avoid deteriorating conditions favoring invasive plants and catastrophic fires. Any projects will be implemented so as to result in a mosaic of vegetation within a watershed.

In the long term, natural disturbance (such as drought or fire) will occur and fewer treatments will be needed to maintain ecological health. The result will be a variety of vegetation phases within a watershed, which will provide diverse, healthy conditions for future generations.